



SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

Ordinance Governing
MD FORENSIC MEDICINE
Curriculum 2019-20

SHRI DHARMASTHALA MANJUNATHESHWARA UNIVERSITY

(A State Private University established under the Shri Dharmasthala Manjunatheshwara University
Act No 19 of 2018 of Government of Karnataka and Notification No. ED 261 URC 2018 dated 19th December 2018)

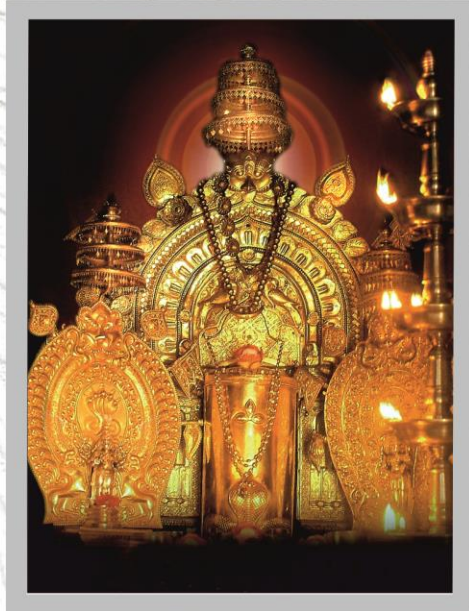
Manjushree Nagar, Sattur, Dharwad - 580 009, Karnataka, India

6th Floor, Manjushree Block SDM Medical College Campus

+91 836 2321127,2321126,2321125,2321124 sdmuniversity.edu.in

sdmuo@sdmuniversity.edu.in ; registrar@sdmuniversity.edu.in

|| Om Shri Manjunathaya Namaha ||



Shree Kshethra Dharmasthala

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Shri Dharmasthala Manjunatheshwara University,
Manjushree Nagar, Sattur, Dharwad - 580 009, Karnataka, India
Phone: 0836-2321127
email: sdmuo@sdmuniversity.edu.in

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Shri Dharmasthala Manjunatheshwara University
6th Floor, Manjushree Block SDM Medical College Campus
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THE LOGO

Poojya Dr D. Veerendra Heggade, Hon'ble Chancellor of the University, while searching for an appropriate Logo for the University, saw a photograph picked from Temple Architecture showing Wings of a Bird, sculpted in Indian style and wanted it to be incorporated in the logo for the University, as the Wings symbolize 'Spreading of Knowledge beyond Boundaries'. Further it was felt that the Central theme of the logo should be 'Rudra' (The Linga) with three wings on each side. In this way, the logo of the University was conceptualized.

Hence:

1. The central part represents **Rudra** who Demolishes Darkness.
2. The Three **horizontal lines on The Linga** stand for Samyak Darshan (Right Belief), Samyak Gyan (Right Knowledge) and Samyak Charitra (Right Conduct).
3. The **Wings** symbolize spreading of Knowledge across the boundaries.
4. Base line "**Truth Liberates**" highlights the Purpose of Education: to liberate oneself unconditionally. It shows that it is not discipline, nor knowledge nor the efforts to freedom that liberate but Truth is what liberates you from all your conditioning and ignorance.

The overall significance of Shri Dharmasthala Manjunatheshwara University's Logo is:

Darkness of ignorance is destroyed by the flow of knowledge to bring Liberty to everyone, by realizing the truth. And, it should spread globally without the boundaries as hindrance.



SHRI
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VISION

Shri Dharmasthala Manjunatheshwara University will set the highest standards of teaching and learning by awakening the intelligence of the students and nurturing the creativity hidden in them by creating an environment where the ancient wisdom blends with modern science, to transform them into whole human beings to face the challenges.

MISSION

- ▶ To ensure that the journey of education is inspiring, pleasant and enjoyable.
- ▶ Attract the best of teachers and students.
- ▶ Achieve high principles of trust, love and spirituality in the students.
- ▶ Create a collaborative, diverse and exclusive community.
- ▶ Transform the student of today to be a leader of tomorrow and a better human being.
- ▶ Produce passionate teachers.
- ▶ Evolve innovative teaching techniques.
- ▶ Create a peaceful environment.
- ▶ Prepare the student to face the social challenges.
- ▶ Create a University of which the Nation is proud of.
- ▶ Be an effective partner in Nation Building.
- ▶ Create an Eco-friendly University.
- ▶ Create a University based on the principles of beauty, love and justice.

||Om Shanti! Om Shanti! Om Shanti||



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6th floor, Manjushree Building, SDM College of Medical
Sciences & Hospital Campus, Sattur, Dharwad - 580009
Tel. No : +91 836 2477511, 2321115, 2321117
Fax: +91836 2463400
Email: registrar@sdmuniversity.edu.in

SDMU/ACAD/MED/PG/129A/2019

Date: 25-04-2019

NOTIFICATION

Ordinance governing Curricula of Medical Postgraduate Degree Courses in Para-clinical Subjects - 2019

- Ref:
1. Minutes of the 1st Meeting of Academic Council held on 20th March 2019
(Letter No: SDMU/AC/M-01/093/2019; Dated:21-03-2019)
 2. Minutes of the 2nd Meeting of Board of Management held on 22nd March 2019
(Letter No: SDMU/BOM/M-02/094/2019; Dated:23-03-2019)

In exercise of the powers conferred under Statutes 1.2 (Powers and functions - section viii), 1.4 (Powers and functions - section ix & x) of Shri Dharmasthala Manjunatheshwara University, the Board of Management is pleased to approve and notify the ordinance governing the Curricula of the following Medical Postgraduate Degree Courses in Para-clinical Subjects - 2019:

1. MD in Pathology
2. MD in Microbiology
3. MD in Pharmacology
4. MD in Forensic Medicine
5. MD in Community Medicine

The ordinance shall be effective for the students joining the course during 2019-20 and onwards.

REGISTRAR
REGISTRAR,
Shri Dharmasthala Manjunatheshwara
University, Dharwad

To: The Principal, SDM College of Medical Sciences & Hospital.

Copy for kind information to:

1. Hon'ble Vice Chancellor - Shri Dharmasthala Manjunatheshwara University.
2. Pro Vice-Chancellor (Academics) - Shri Dharmasthala Manjunatheshwara University.
3. Controller of Examinations - Shri Dharmasthala Manjunatheshwara University.



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2.	Course contents
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M.D. FORENSIC MEDICINE

A. OBJECTIVES

The subject is “**State Medicine/Forensic Medicine**” involving the society at large.

The trained doctors, upon completion of post-graduation, must be able to:

1. Give expert opinion regarding age estimation, sexual offences involving victim and accused, injury cases, intoxicated persons, mentally and physically handicapped persons who need certification and also in cases of poisoning etc.
2. Opine about ethically sound decisions as and when newer ethical dilemmas arise in medical practice.
3. Conduct Medico-legal autopsies and various other Medico-legal procedures like Examination of Victim / Accused in Sexual Assault cases etc.
4. Give expert opinion regarding the cause, manner and mode of death.
5. Establish the identity in unknown bodies and opine about the probable time since death to help the investigating police officers.
6. Assist the courts in the administration of justice.
7. Handle poisoning cases at Casualty/ Emergency.

B. COURSE CONTENTS

THEORY

I. Basic Medical Sciences in relation to Forensic Medicine.

- a) **ANATOMY:** Applied anatomical aspects in relation to Forensic Medicine, surface land marks and regional anatomical study, Anatomy of neck with reference to asphyxial forms of death. Gross anatomy of the heart, coronaries and circulation of blood including foetal circulation, microscopic anatomy of the heart, brain, lung, liver, kidney, spleen, adrenals, bone, skin; comparative anatomy of male and female skeletons; Forensic aspects of Dentistry.

- b) **PHYSIOLOGY:** Applied aspects in relation to Forensic Medicine, Blood grouping, Rh typing & incompatibility, hazards of mismatched transfusion; Physiology of menstrual cycles, pregnancy and delivery. Thermoregulation; Physiology of shock; Sexual functions in Male and Female; Outline of the functions of Respiratory, Haematopoietic, Nervous, Digestive, Endocrine, Excretory, Reproductive and Musculoskeletal system.
- c) **BIOCHEMISTRY:** Applied aspects in relation to forensic practice. Post mortem chemistry of blood, CSF, and other body fluids.
- d) **PATHOLOGY:** Applied aspects including pathology of cells, tissues, degeneration, necrosis, inflammation and repair, tissue reaction to injuries. Ischaemia, Infarction, Cloudy swelling, Amyloidosis, Calcification, Thrombosis & Embolism, Wound healing, fibrosis and scar formation including repair of fractures,. General and systemic diseases caused by physical / chemical agents; disorders of infancy & old age relevant to Forensic Medicine; Pathology, gross & microscopic in, Myocardial Infarction, Pneumonia, Congenital Heart Diseases, TB, Cirrhosis, Malnutrition.
- e) **MICROBIOLOGY:** Basic Concepts of Immunology and Serology; Anaphylaxis and hypersensitivity, immune-serological tests, precipitin test; wound infection; Entomology of the cadaver.
- f) **PHARMACOLOGY:** Pharmacology of drugs used to procure Abortion, Drugs causing Impotency, Anesthetic drugs & their adverse effects and overdose effects; adverse reactions (allergy) to drugs commonly used in therapy.

II. Clinical Forensic Medicine, Forensic Pathology, Forensic Radiology and Related Sections of IPC, CrPC, Indian Evidence Act.

- a) Introductory: Criminal Courts & their powers, Inquests & legal procedure. Medical evidence, various Medico-legal certificates and Medico legal reports; Dying declaration; Duties of doctor as Expert Witness.
- b) Identification of living and dead, Determination of race, sex, religions, age, external peculiarities such as moles, birth marks, occupational marks, anthropometrics, finger prints & foot prints, cheiloscropy, bite marks & their medico-legal significance, handwriting and its medico-legal importance. Evaluation of evidence from skeleton, bones; problems of reconstruction & super imposition.
- c) Detailed Medico-Legal Autopsy of a dead body, decomposed and mutilated body or its fragments; Exhumation & rules governing it.
- d) Death - Moment of death; manner of death; suspicious / due to unknown and unnatural causes, causes of sudden death; Brain death - all aspects.
- e) Signs of death and changes following death, Estimation of postmortem interval, Postmortem chemistry of body fluids like blood, CSF, vitreous humor; presumption of death and presumption of survivorship.
- f) Evidence from trace evidences like hair, nails, blood stains, semen, saliva, vomitus etc.
- g) Mechanical injuries and their medico-legal aspects in relation to the nature of the injuries, like accidental, suicidal and homicidal; Medico-legal

examination of injured person; Regional injuries; examination of weapons in relation to inflicted injuries; Causes of death from wounds.

- h) Injuries and deaths from energies like cold, heat, electricity, lightning and radiation.
- i) Study of violent asphyxial deaths like hanging, strangulation, suffocation and drowning.
- j) Starvation death.
- k) Role of Forensic radiology in identification, in pathological process, dentistry, child abuse & battered baby syndrome & trauma especially firearm injuries.
- l) Medico-legal aspects of emergency procedures, resuscitation, intensive care, anesthetic and operative deaths.
- m) Torture Medicine: Medico-legal duties and aspects in cases of torture.
- n) Impotence, sterility, artificial insemination, sterilization, test-tube babies and their Medico-legal aspects. Surrogate mother hood & its Medico-legal aspects, Medico-legal importance of family planning.
- o) Virginity, Pregnancy, Delivery, in relation to suit of Nullity of Marriages, Divorce, Defamation, Legitimacy and Affiliation cases etc.
- p) Abortion – Criminal & justifiable, laws in relation to criminal abortion, MTP act of 1971, duties of doctors performing MTP.
- q) Sexual Offences – Rape, Incest, unnatural sexual offences, such as sodomy, bestiality, buccal coitus and sexual perversions.

r) Infanticide – all aspects.

III. Forensic Toxicology, Forensic Psychiatry and Medical Jurisprudence.

a) **FORENSIC TOXICOLOGY:** Introduction, laws in relation to poisons, toxicological, Medico-legal aspects and patterns of poisoning in India. Duties of Medical practitioners in cases of suspected poisoning.

General consideration and management of common poisoning cases like food adulterants, corrosive poisons, nonmetallic poisons, metallic poisons, organic irritant poisons (vegetable and animal poisons) & mushrooms, somniferous poisons, inebriants, deliriant poisons, spinal poisons, asphyxiants, cardiac poisons, miscellaneous poisons like curare, Conium maculatum, food poisoning, drug dependence, environmental poisons, industrial poisons, pneumoconiosis, toxic radioactive substances.

Agricultural poisons like insecticides, pesticides, weed killers.

Medicinal Poisons - Analgesics, Antipyretics, Anesthetics, Central Nervous stimulants & depressants, Drugs/poisons affecting Autonomic Nervous System, Antiseptics, Cathartics, Chemo-therapeutic agents, Endocrine drugs, house hold chemicals, irritants and rubifacients.

Industrial agents and solvents like – Carbon monoxide, General Anesthetic agents, hydrocarbons, Chlorine, Hydrogen sulphide, Carbon dioxide, Methyl Isocyanate, carbon disulphide, phenol & related compounds, formaldehyde and other inhalant poisons.

Biological factors that influence toxicity, genetic factors influencing toxicity, chemical factors affecting toxicity, influence of route of administration of poisons.

Treatment and prevention of poisoning - General principles, procedures for decreasing absorption or transportation, procedures for enhancing the termination of action of poisons and enhancing their elimination, procedure

for elevating the threshold of toxicity. Study of Antidotes like activated charcoal, calcium disodium edetate, cathartics and whole bowel irrigations, chloride for withdrawal management, Antidotes / chelating agents like Desferrioxamine, Dimercaprol (BAL), Naloxone, Pralidoxime, Physostigmine etc.

- b) FORENSIC PSYCHIATRY:** Various laws and acts (enactments) in relation to Forensic Psychiatry, Classification and etiology of Mental disorders and abnormal human behaviours, Medico-legal aspects of insanity with regard to civil and criminal responsibilities. Rules regarding Restraint and Admission, treatment and discharge of mentally challenged persons to Mental Asylums/ Hospitals. Juvenile delinquency, True & Feigned insanity, Mental Health Care Act, 2017.

The biology of behaviour, emotion, stress, attitudes, normal & abnormal personalities & disorders, counseling in abnormal sexual behaviours and in persons attempting suicides.

- c) MEDICAL JURISPRUDENCE:** Definition, Ethics, Etiquette, Hippocratic Oath, Regulation of Medical Profession - various governing bodies, Declaration of Geneva, International Code of Medical Ethics; Rights, duties and privileges of medical practitioners; Consent and its types in practice; Infamous conduct; Professional Secrecy and Confidentiality; Euthanasia; Biomedical research involving human subjects - experimentation and therapeutic trials; Legal and ethical aspects of family planning procedures, Surrogacy, Artificial Insemination, Paternity testing and their Medico-legal importance. Practice in relation to Insurance, Indemnity, Workmen's compensation act and its applicability. Duties of doctors in the Witness box. Medico-legal aspects of Organ and Tissue Transplantation (TOHA). Civil and Criminal Negligence and defenses against lawsuits, Contributory Negligence, Doctrine of Res Ipsa Loquitur, Medical Maloccurrence, Therapeutic misadventure and Therapeutic privilege, Partial and Complete disclosure, Novus actus interveniens; Vicarious liability, Corporate negligence, Doctrine of Common Knowledge, Last Clear Chance Doctrine. Product Liability

IV. Basic Forensic Science and Recent Advances in Forensic Medicine

Basic Forensic Science aspects like Forensic Serology, Biology; Study of finger, lip and foot prints; Forensic Ballistics; Narco-analysis and Brain Mapping; DNA Profiling; Neutron Activation Analysis. Examination of Biological fluids and blood stains; Forensic Anthropology, Forensic Odontology, Forensic Taphonomy, Study of Trace evidences, Crime scene investigation. Study of Biohazards - safety precautions.

Recent advances made in Forensic Medicine as published in National and International journals and knowledge gained by attending CMEs, Updates, Seminars, Workshops at State level and National Conferences of Forensic Medicine, Forensic Science, Criminology etc.

C. METHOD OF TRAINING

I. Every post graduate student should attend:

- a) Journal Club - Once a month.
- b) Central Guest Lectures, Seminars and other Continuing Medical Education programs for all post graduate students.
- c) Undergraduate classes.
- d) Court along with senior teachers when they are summoned to depose medical evidence.

II. Every Post-graduate should:

- a) Conduct medico legal autopsies on all the cases during entire period of post-graduation and will sign minimum of 100 autopsy reports which will be countersigned by the faculty.
- b) Take part in undergraduate teaching programmes and conduct classes and demonstrations including medico - legal autopsies.

- c) On call duty with casualty/ emergency department to attend and certify the medico legal cases.
- d) Pathology posting for 1 year (preferably 2nd and 3rd term) to conduct grossing, processing, staining and reading the histopathology slides.
- e) In-charge for the toxicology cases as part of the Medicine/Emergency Medicine Department and work under respective specialties.
- f) Attend one training programme in Forensic Odontology at SDM College of Dental Sciences, Dharwad (Preferably in 3rd/4th term).
- g) Exercise - To prepare one Moot Court Memorial on Medical Negligence Case.

III. Posting / Deputation to other Disciplines

- a) Pathology ----- 1 Year (2nd and 3rd term)
- b) Psychiatry ----- 1 Month (5th term)
- c) Forensic Science Laboratory ---- 3 Weeks (5th term)

The purpose of posting to other departments is to learn practical aspects of those subjects.

Monitoring: By concerned Head of the Department who certifies the work diary / Log book maintained by the students at the end of the posting.

IV. DISSERTATION

- a) Every candidate is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such work shall be submitted in the form of a dissertation.
- b) The dissertation is aimed to train the candidate in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of relevant literature, getting acquainted with

recent advances, designing of research study, collection of data, critical analysis of results and drawing conclusions.

- c) The dissertation is to be submitted at least six months before the final examination as notified by the university to the Registrar (Evaluation).
- d) The dissertation shall be valued by three examiners.
- e) Prior acceptance of the dissertation shall be a precondition for a candidate to appear for the final examination.

D. SCHEME OF EXAMINATION:

Comprises of theory, practical and viva voce examination inclusive of pedagogy.

I. Theory : (400 Marks)

There shall be four question papers, each of three hours duration.

Total marks for each paper will be 100. Questions on recent advances may be asked in any or all the papers *

- PAPER – I: Basic Medical Sciences in relation to Forensic Medicine.
- PAPER -II: Clinical Forensic Medicine, Forensic Pathology, Forensic Radiology and Related sections of IPC, CrPC, IEA.
- PAPER–III: Forensic Toxicology, Forensic Psychiatry and Medical Jurisprudence.
- PAPER – IV: Basic Forensic Science and Recent Advances in Forensic Medicine.

Note The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of topics is inevitable. Students should be prepared to answer overlapping topics.*

II. Practicals: (200 marks)

Duration of practical examination will be 2 days including viva-voce

- One long case - adult autopsy: 100 Marks
- Short Cases: 100 marks
 - a) Examination of injury case.
 - b) Alcoholic/ Drunkenness case.
 - c) Sexual offence case.
 - d) Age estimation case.
 - e) Poisoning case.
 - f) Psychiatry case.
 - g) Skeletal Remains.
 - h) Photography.
 - i) Toxicology specimen.
 - j) Weapons.
 - k) Microscopy slides.
 - l) X-Ray films.
 - m) Expert opinion.
 - n) Foetal autopsy

III. Viva Voce: 100 Marks

➤ **Viva-Voce Examination: (80 Marks)**

Students will be examined by all the examiners together about student's comprehension, analytical approach, expression and interpretation of data. Student shall also be given case reports and charts for interpretation. It includes discussion on dissertation.

➤ **Pedagogy Exercise: (20 Marks)**

A topic will be given to each candidate along with the Practical Examination question paper on the first day. Student is asked to make a presentation on the topic on the second day for 8 to 10 minutes.

Maximum marks for M.D. Forensic Medicine	Theory	Practical	Viva	Grand Total
	400	200	100	700

E. RECOMMENDED TEXT BOOKS AND JOURNALS

1. Bernard Knight, Forensic Pathology, Arnold, 4th Edition 2016.
2. Modi, A Text Book of Medical Jurisprudence and Toxicology. Edited by Justice K Kannan. LexisNexis, 26th Edition, 2018.
3. C J Polson, Essentials of Forensic Medicine, Pergamon Press , 4th Edition.
4. Gordon and Shapiro, Forensic Medicine, Churchill Livingstone, 3rd edition.
5. J.K. Mason, Paediatric Forensic Medicine and Pathology, Springer, 1st Edition.
6. K.S. Narayana Reddy, Essentials of Forensic Medicine and Toxicology, Medical Book company, Hyderabad – 34th Edition 2017.
7. Apurba Nandy, Principles of Forensic Medicine, New central Book Agency, 3rd Edition, 2010.
8. C.G. Tedeschi Forensic Medicine - Physical Trauma Vol I and II.
9. Francis Camps, Gradwohl's Legal Medicine, Bristol, John Wright and sons, 3rd Edition.

10. Jason Payne, Simpson's Forensic Medicine, CRC Press, 13th Edition, 2014.
11. Keith Mant, Taylor, Principles and Practice of Medical Jurisprudence, Churchill Livingstone, 13th Edition.
12. P V Guharaj, Forensic Medicine, Orient Langman, 2nd Edition, 2003.
13. J. B. Mukherjee, Forensic Medicine and Toxicology Vol I, II and III, 2nd Edition.
14. Gresham and Turner, Post Mortem procedures, Wolfe Medical Publications, II Edition.
15. V. V. Pillay, Modern Medical Toxicology, Jaypee brothers, 4th edition, 2013.

Journals:	
1.	Journal of Forensic Sciences - American Academy of Forensic Sciences.
2.	Medicine, Science and Law - British Academy of Forensic Sciences.
3.	Journal of Forensic and Legal Medicine
4.	American Journal of Forensic Medicine and Pathology
5.	Journal of the Indian Academy of Forensic Medicine

ADDITIONAL READING

1. Compendium of recommendations of various committees on Health and Development (1943-1975). DGHS, 1985 Central Bureau of Health Intelligence, Directorate General of Health Services, min. of Health and Family Welfare, Govt. of India, Nirman Bhawan, New Delhi. P - 335.
2. National Health Policy, Min. of Health & Family Welfare, Nirman Bhawan, New Delhi, 1983
3. Santosh Kumar, The elements of Research, writing and editing 1994, Dept. of Urology, JIPMER, Pondicherry
4. Srinivasa D K et al, Medical Education Principles and Practice, 1995. National Teacher Training Centre, JIPMER, Pondicherry
5. Indian Council of Medical Research, "Policy Statement of Ethical considerations involved in Research on Human Subjects", 1982, I.C.M.R, New Delhi.
6. Code of Medical Ethics framed under section 33 of the Indian Medical Council Act, 1956. Medical Council of India, Kotla Road, New Delhi.
7. Francis C M, Medical Ethics, J P Publications, Bangalore, II edn, 2004.
8. Indian National Science Academy, Guidelines for care and use of animals in Scientific Research, New Delhi, 1994.
9. International Committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journals, N Engl J Med 1991; 424-8
10. Kirkwood B R, Essentials of Medical Statistics, 1st Ed., Oxford: Blackwell Scientific Publications 1988.
11. Mahajan B K, Methods in Bio statistics for medical students, 5th Ed. New Delhi, Jaypee Brothers Medical Publishers, 1989.
12. Raveendran and B Gitanjali, A Practical approach to PG dissertation, New Delhi, J P Publications, 1998.



SDM College of Medical Sciences & Hospital



SDM College of Dental Sciences & Hospital



SDM College of Physiotherapy &
SDM Institute of Nursing Sciences



Shri Dharmasthala Manjunatheshwara University



SDM Research Institute for Biomedical Sciences



Panoramic View of Campus