

M.Sc. BIOMEDICAL SCIENCES DEGREE PROGRAM (under CBCS)

INTRODUCTION

The Master's programme in Biomedical Sciences provides a unique combination of fundamental research and clinical application, with a special focus on multidisciplinary aspect such as biochemical, molecular and patho-physiological mechanism of diseases. Investigating and understanding the diseases give the skill and knowledge to work towards discovery and development of preventive/ therapeutic drugs. There is an increasing prevalence of non-communicable diseases as a result of lifestyle changes and urbanization in India. Infectious diseases are also still persisting as major health problems in Indian population. These are the challenges that are to be tackled in the new millennium, so there is a need to understand the pathogenesis and to develop the new markers and diagnostic protocols with respect to the relevant field. The requirement for Biomedical Scientist is important because they are expected to bridge the gap between biomedical research, diagnostics and clinical applications.

OBJECTIVES:

- To improve the skills and critical thinking in the field of clinical research
- To understand the pathogenesis and to develop the new markers and diagnostic protocols with respect to the relevant field.

JOB OPPURTUNITIES:

On successful completion of the course, the Biomedical Science graduates could contribute to the Private sector or National healthcare laboratories

- Testing and screening of life style disorders (**Diagnostics**)
- Investigating and understanding the disease mechanisms (**Research fellow**)
- Working towards discovery and development of treatments, which could be preventive (vaccines) and/or therapeutic (drugs and medicines-**R &D**)
- Working in academic institutions (**Higher education**)

ELIGIBILITY:

- A candidate who seeks admission to M.Sc. Biomedical Sciences Degree program should have passed the B.Sc Biomedical Sciences / Biology/ Biochemistry/ Allied Health Sciences / Biotechnology/ Clinical Nutrition/ Botany / Genetics/ Microbiology/ Life Sciences/ Zoology/B. Tech. (Biotechnology, Genetic Engineering)/ MBBS/BDS/ degree of any university recognized by the UGC.
- There is no domicile restriction and therefore candidates belonging to any State/Union Territory in India are eligible to apply.

ABOUT THE DEPARTMENT

The Department of Biomedical Sciences was instituted in 2007 and functions under the constituent Faculty of Biomedical Sciences, Technology & Research. The Department has an aesthetically designed phenomenal infrastructure with an array of research equipments like inverted microscope, upright fluorescent microscope, zoom microscope, UV Vis Spectrophotometer, HPLC, gas chromatography and IR Spectrophotometer.

ABOUT THE PROGRAMME

The Masters programme in Biomedical Sciences provides a unique combination of fundamental research and clinical application, with a special focus on multidisciplinary aspect such as biochemical, molecular and pathophysiological mechanism of diseases. Biomedical research is a fundamental cornerstone for the discovery of new biological knowledge that allows the development of new treatments to combat genetic conditions, infectious diseases and common social-driven diseases such as diabetes within communities.

Hence, investigating and understanding the diseases give the skill and knowledge to work towards discovery and development of preventive/therapeutic drugs. There is an increasing prevalence of non-communicable diseases as a result of lifestyle changes and urbanization in India. Infectious diseases are also still persisting as major health problems in Indian population. The requirement for Biomedical Scientist is important because they are expected to bridge the gap between biomedical research, diagnostics and clinical applications.

First Year-First Semester

Category	Course title	Credits
CT1	Biomolecules	4
CT2	Molecular Cell Biology and Signaling	4
CT3	Human Physiology	4
DE1	Nanotechnology in Biomedical Applications	3
AE1	Clinical Embryology	2
CL1	Biomolecules Lab	3
CL2	Molecular Cell Biology and Signaling Lab	3
CL3	Human Physiology Lab	3

First Year-Second Semester

Category	Course title	Credits
CT4	Molecular Biology	4
CT5	Microbiology and Immunology	4
CT6	Enzymology	4
DE2	Bioinformatics	3
AE2	Forensic Science	2
SE1	To be chosen by student	2
CL4	Molecular Biology Lab	2
CL5	Microbiology and Immunology Lab	3
CL6	Enzymology Lab	3

Second Year-Third Semester

Category	Course title	Credits
CT7	Bioanalytical Instrumentation & Techniques	4
CT8	Oncobiology	4
CT9	Clinical Epidemiology and Biostatistics	4
DE3	Molecular and Cellular Pathology	3
GE1	To be chosen by student	3
AE3	Research Methodology	2
CL7	Bioanalytical Instrumentation & Techniques Lab	3
CL8	Oncobiology Lab	2
CL9	Clinical Epidemiology and Biostatistics Lab	2

Second Year-Fourth Semester

Category	Course title	Credits
DE4	Pharmacology & Toxicology	3
AE4	Stem Cell Biology & Regenerative Medicine	2
RP	Dissertation & Viva Voce	15

RESEARCH EXPERTISE AND GUIDANCE

- Phytotherapy research
- Genetics of Polycystic Kidney Disease
- Diabetes and ocular biology
- Stem cell research
- Applied Microbiology
- Drosophila Biology
- Diabetic Wound Healing in Zebra fish model
- Nanotechnology in Biomedical applications

DEPARTMENT FACILITIES

- Instrumentation Facility
- Phytomedicine Lab
- Animal Cell Culture Lab
- Drosophila Lab
- Microbiology Lab
- Genomics Lab
- Proteomics Lab
- Stem Cells Lab
- Zebrafish Lab



ABOUT SRI RAMACHANDRA MEDICAL COLLEGE AND RESEARCH INSTITUTE

Sri Ramachandra Medical College & Research Institute is dedicated to excellence in education; healthcare and research since its inception in 1985 by its founder Shri. N.P.V.Ramasamy Udayar. An internationally acclaimed medical school is supported by eight multidisciplinary constituent faculties- Dental, Biomedical Sciences, Nursing, Pharmacy, Physiotherapy, Allied Health Sciences, Management & Public Health.

WHY SRI RAMACHANDRA MEDICAL COLLEGE & RESEARCH INSTITUTE (DU)

Sri Ramachandra Medical College & Research Institute apart from providing world class education helps in building a well rounded personality and provides ample opportunities for students to develop into responsible leaders and dynamic professionals in their careers.

WHO CAN BENEFIT FROM THIS DEGREE

We are looking for students who have a strong desire to understand fundamentals of Basic Medical Sciences and aspire to be leaders in Biomedical research and development.

ELIGIBILITY FOR ADMISSION

A candidate who seeks admission to M.Sc. Biomedical Sciences Degree program should have passed MBBS, BDS, B.Sc., [Allied Health Sciences/ Biology/ Biochemistry/ Biomedical Sciences/ Biotechnology/ Clinical Nutrition/ Botany/Genetics/ Microbiology/ Life Sciences/ Zoology] B. Tech., (Biotechnology, Genetic Engineering)/ degree of any university recognized by the UGC.

For More Details

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SRI RAMACHANDRA

INSTITUTE OF HIGHER EDUCATION AND RESEARCH (Deemed to be university) FACULTY OF BIOMEDICAL SCIENCES, TECHNOLOGY & RESEARCH



M.Sc., BIOMEDICAL SCIENCES




A decade long 'Smile Train' program of USA offers care for Cleft Lip & Palate children in India

M.Sc. Biomedical Sciences

PROGRAM HIGHLIGHTS

The course has been designed

- To improve the skills and critical thinking in the field of clinical research
- To understand the mechanism of pathogenesis and to develop the new markers and diagnostic protocols with respect to the relevant field.

HIGHER EDUCATION

- ✓ Glycobiology
- ✓ Oncobiology
- ✓ Molecular Biology
- ✓ Microbiology
- ✓ Biotechnology
- ✓ Nanotechnology
- ✓ Stem Cells
- ✓ Clinical Embryology
- ✓ Clinical Research
- ✓ Translational Research

JOB OPPORTUNITIES

- Diagnostics
- R&D sectors
- Research Fellow
- Biomedical Industry Placements
- Consultancy
- Health protection agencies
- Pharmacovigilance sectors
- Forensic Science Departments
- Academic Institutions