



VINAYAKA MISSION'S
RESEARCH FOUNDATION
(Deemed to be University under section 3 of the UGC Act 1956)



AVMC
AARUPADAI VEEDU MEDICAL COLLEGE

DMET  Department of
MEDICAL BIOTECHNOLOGY
Faculty of Interdisciplinary Studies



MASTER'S DEGREE PROGRAM



Immerse yourself in a top learning center, to transform your
career, and discover new possibilities



INFORMATION BROCHURE
ACADEMIC YEAR 2023-2024



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PREFACE

We are delighted to present the information brochure for the M.Sc., Medical Biotechnology program for the academic year 2023-2024. The Department of Medical Biotechnology at Aarupadai Veedu Medical College and Hospital, under the Faculty of Interdisciplinary Studies, is committed to providing a world-class education in the exciting field of Medical Biotechnology.

With the advancements in technology and the growing demand for medical solutions, the field of Medical Biotechnology has become increasingly important. Our program is designed to equip students with the knowledge and skills required to excel in this field.

The program is structured to provide students with a strong foundation in the fundamentals of Medical Biotechnology, as well as exposure to the latest developments in the field. The curriculum has been designed keeping in mind the needs of the industry and academia and includes core and electives including industrial sponsored courses. The program will be delivered by a team of highly experienced and qualified faculty members.

Our program is a highly student-centric approach, which focuses on providing a supportive and engaging learning environment. Our state-of-the-art facilities and laboratories provide students with hands-on experience, and we encourage them to participate in research activities and internships to gain practical exposure.

We hope that this information brochure will provide you with a comprehensive understanding of our program and the opportunities it presents. We look forward to welcoming you to the Department of Medical Biotechnology at Aarupadai Veedu Medical College and Hospital and supporting you in your academic and professional pursuits.

• **Prof. P.F. Kotur,**
Dean, AVMC

It is a matter of Pride for AVMC that a much needed Master's Program (M.Sc) in Medical Biotechnology is being offered here from Aarupadai Veedu Medical College, Puducherry with effect from this academic year 2023-24. As the scope for the Professional Medical Biotechnologists, is quite board to function as a Researcher, Scientist, Clinical Lab Technician, Manufacturer of vaccines and many DNA products, AVMC has ventured to offer this program.

The Department of Biotechnology of AVMC has a state of Central Research Lab with sophisticated modern equipment and highly qualified and experienced faculty members (Teachers). Academic environmental in the AVMC campus is quite conducive for learning with high technology learning resources. The teaching hospital of AVMC is quite complementary for clinical training.

I am sure the new professionals coming art of their program will be highly competent to subserve any role in the time to come.

• **Prof. B. Vishnu Bhat,**
Adviser- Medical Research and Publication, AVMC

I am very happy to learn that department of medical biotechnology at Aarupadai veedu medical college and hospital, Pondicherry, a constituent college of Vinayaka mission's research foundation-DU, Salem is starting a MSc course in medical biotechnology from this academic year. It is important that we are adequately trained in managing not only the existing disease conditions but also emerging new diseases. The patient may require advanced diagnostic techniques and treatment facilities so that the condition can be reversed. Biotechnology training will have different curriculum depending on the subject area being covered. Medical biotechnology will cover basic anatomy, biochemistry and physiology of human beings. It should also cover pathological and microbiological subjects along with molecular diagnostic techniques. I am sure that the 2 yrs. training will give adequate knowledge and skill to the outgoing students. I am sure that this course will meet the expectations and aspiration of students, community and the institutions in which they will be employed.

I wish them a grand success.

• **Prof. V.N. Mahalakshmi,**
Dean-Health Professions' Education, AVMC

The field of Medical Biotechnology is experiencing rapid growth, characterized by remarkable technological advancements. It is an expansive domain that drives cutting-edge discoveries in healthcare. Our M.Sc Medical Biotechnology program at Aarupadai Veedu Medical College (AVMC) offers a comprehensive curriculum designed to meet the demands of the industry. We provide students with both theoretical knowledge and hands-on practical training that align with the current market needs. To ensure a high-quality educational experience, we have assembled a team of experienced and enthusiastic fauctly who specialize in various areas of Medicine and Biotechnology. Our dedicated team will be delivering the program with expertise and passion, imparting invaluable knowledge to our students. In addition to fostering practical skills, our program places great emphasis on developing interpersonal and entrepreneurship abilities. The state of art and cutting edge infrastructure and facilities in our institute make this dream come true necessary skills to excel in the workplace and adapt to the dynamic nature of the industry.

By choosing our program at AVMC, students gain access to a vibrant learning environment that nurtures their potential and prepares them for a successful career in this fast-evolving field.



Welcome to Aarupadai veedu Medical College

Aarupadai Veedu Medical College & Hospital (AVMC&H) was established in the year 2000 as a constituent college of Vinayaka Mission's Research Foundation (Deemed to be University). It is a renowned medical institution that provides a wide range of healthcare services including patient care, diagnostics, rehabilitation, prevention, and pharmacy services.

AVMC boasts state-of-the-art facilities, including a fully equipped Intensive Coronary Care Unit (ICCU), Intensive Care Unit (ICU), Paediatrics Intensive Care Unit (PICU), Neonatal Intensive Care Unit (NICU), and Center for Biomedical Research.

The campus itself is a self-contained and serene environment, covering a sprawling 44 acres of lush green land, Library, Hostels and Students support amenities



Salient Features of Master of Medical Biotechnology

The M.Sc., Medical Biotechnology program is a two-year postgraduate course that provides students with in-depth knowledge and practical training in the field of medical biotechnology. This program follows a choice-based credit system (CBCS) to support the new type of training where the mentoring and tutoring with active research is an integral part of the academic life and learning experience of a student. The salient features of our program include:

- 1. Curriculum:** A progressive curriculum designed to provide students with a thorough understanding of various aspects of medical biotechnology, including molecular biology, genetic engineering, tissue engineering, drug design, and molecular diagnostics apart from foundational knowledge from medical subject.
- 2. Practical Training:** Focus on hands-on practical training in various techniques and methods used in the field of medical biotechnology. Ample opportunities to work in external laboratories and gain practical experience.
- 3. Research-oriented:** Training research methods opportunity to carry out research projects in their areas of interest.
- 4. State-of-the-art Facilities:** At central Research Lab, Library, Academic infrastructure.



- **Experienced Faculty:** The program is taught by experienced faculty members who have expertise in the field of cell biology, molecular biology, synthetic biology, microbiology, genomics & medical biotechnology and provide students with valuable insights and knowledge.
- **Interactions with Clinician:** The student of this program will have the golden opportunity to discuss with doctors regarding patients' disease pathogenicity and able to understand the underlying molecular mechanisms of the disease condition.



Course Duration: Two years (Four semesters)

Eligibility: B.Sc., (50% of aggregate marks) in any branch of Life Sciences (Zoology/Biochemistry/ Microbiology/Biotechnology/MLT), MBBS,BDS, BVSc., or equivalent there-to.

Electives

- › Analytical Techniques in Biotechnology
- › Developmental and Stem Cell Biology
- › Hands on Workshop
- › Bioinformatics and Computational Biology
- › Proteomics and Genomics
- › Industrial Visit
- › Cancer Biology
- › Pharmaceutical Biotechnology
- › Summer Internship
- › Nanobiotechnology
- › Marine Biotechnology



*Program Structure

SEMESTER I

- › Anatomy & Physiology
- › Cell Biology
- › Basic Medical Microbiology
- › Biochemistry & Metabolism
- › Biostatistics

SEMESTER II

- › Pathology
- › Immunology and Immunotechnology
- › Microbial Biotechnology
- › Molecular Biology and Human Genetics
- › Research Methodology



- › Biomedical Waste Management and Biosafety
- › Environmental Science
- › Introduction to Healthcare Data
- › Intellectual Property Rights
- › Fundamentals of Entrepreneurship
- › GLP and GCP
- › IELTS
- › Scientific Reading & Writing



*Program Structure

SEMESTER III

- › Pharmacology
- › Genomic Medicine and Drug Designing
- › Genetic Engineering and Recombinant DNA technology
- › Molecular Diagnostics
- › Project Phase I

SEMESTER VI

- › Bioethics
- › Tissue Engineering and Regenerative Medicine
- › Project Phase II
- › Conference Presentation / Publications



Career Opportunities

M.Sc Medical Biotechnology

Faculty of Interdisciplinary Studies



Medical Technologists

- › Laboratory Technician
- › Diagnostic Executive
- › Clinical Biotechnologists



Quality & Regulatory Affairs

- › Quality Assurance Executive
- › Quality Associate
- › Regulatory Affairs Executive
- › Patent Associate



Business Development

- › Project Manager
- › Regional Business Manager
- › Data Analyst
- › Account Manager
- › Procurement Executive
- › Application Specialist
- › Product Specialist
- › Production Planner
- › Claim Assessor



Research & Development

- › Entrepreneurship Director
- › Managing Director
- › Research Fellow
- › Research Officer
- › Clinical Research Associate



Academia

- › Teacher
- › Lecturer

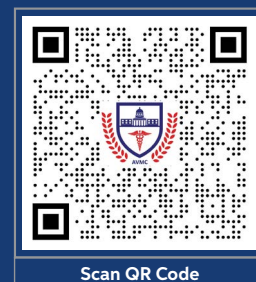


Fees Details

S.No.	Particulars	I Year	II Year
1.	Tuition Fees	75000	75000
Unversity Fees			
2.	Admission Fee	2000	0
3.	Registration Fee	3500	0
4.	Eligibility Fee	1500	0
5.	Library Fee	1000	1000
6.	Sports Fee	1000	1000
Miscellaneous Fees			
7.	Digital Learning Support Books & Records Lab Coat ID Card	11000	8000
		95000	85000

How to apply:

- Visit the official website of <https://avmc.edu.in/medical-biotechnology/>
- Read the eligibility criteria and other important information mentioned in the information brochure.
- Fill in the online application form and upload all the required documents.
- Shortlisted candidates will be notified through email and institute's website.





Dr. Ravikumar S, M.Sc., Ph. D.

Associate Professor

Specialization: Proteomics

Research Experience: Dr. Ravikumar's specializes in Molecular Diagnostics, Discovery Genomics, Genetic Engineering, Proteomics and Bioinformatics. His current research focus on the high-throughput proteomics for alcoholic Liver disorders, chronic kidney disease technologies and cancer biomarker discovery.



Dr. Ganesh I, M.Sc., M. Phil., Ph. D.

Assistant Professor

Specialization: Transcriptomics

Research Experience: Dr. Ganesh I has expertise in transcriptomics and has contributed significantly to the understanding of gene expression and regulation using high-throughput sequencing techniques. His research focuses on studying transcriptomic changes in in vivo and in vitro culture and by metabolic engineering of microorganisms.



Dr. Aarthi M, M.Sc., Ph. D.

Assistant Professor

Specialization: Pharmacogenomics

Research Experience: Dr. Aarthi M specializes in genomics, pharmacogenomics and personalized medicine, genetics of adverse drug reactions and ophthalmic genetic disorders. Her current research focuses on whole genome and whole exome sequencing of genetic disorders.



Dr. Prithviraj N, M.Sc., Ph. D.

Assistant Professor

Specialization: Metabolomics

Research Experience: Dr. Prithviraj N's research expertise lies in metabolomics, with a focus on understanding the metabolic changes associated with diseases such as diabetes, cardiovascular diseases, and metabolic syndromes. He utilizes advanced analytical techniques to study the metabolic profiles of different biological samples and their implications in health and disease.



Dr. Thiyagarajan S, M.Sc., Ph. D.

Assistant Professor

Specialization: Infectious disease genetics & Genomics

Research Experience: Dr. Thiyagarajan S specializes in the field of infectious disease genetics and genomics, with a focus on understanding the genetic determinants of infectious diseases and their implications in disease susceptibility, transmission, and treatment. His research involves the use of genomics and bioinformatics tools to study the genetic factors associated with infectious diseases.



Dr. Shajahan A, M.Sc., Ph. D.

Research Associate

Specialization: Nanobiotechnology in healthcare

Research Experience: Dr. Shajahan Azeez's research work emphasizes the implementation of biomaterials in the field of nanobiotechnology, with significant potential for improving healthcare in areas such as oncomedicine and wound healing.



Synthetic
Biology Lab

Genomics &
Proteomics lab

Bioinformatics
lab

Cell culture
lab

Animal house
Facility



Instrumentation Facilities



SUMMER TRAINING PROGRAM

WIPACRA MEDICAL RESEARCH FOUNDATION
CBR HEALTH SCIENCES CENTER FOR BIOMEDICAL RESEARCH
AVMC

Welcome Delegates
A Three Days Workshop on
"Current Trends in PCR Techniques and its Application in Molecular Diagnostics"
25th 2022
Venue: Center for Biomedical Research, AVMC, Puducherry
Supported by

Prof. M. R. Katar
Prof. S. Vidhya Smit



YOU CAN HALFWAY





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