



AMRITA
VISHWA VIDYAPEETHAM

Institute of
Medical Sciences

AMRITA HEALTH SCIENCES CAMPUS

PROSPECTUS 2020



KEEP CHOOSING TO BE GREAT. CHOOSE AMRITA!



AMRITA INSTITUTE OF MEDICAL SCIENCES

Amrita Health Sciences Campus

PROSPECTUS

2020



Amrita Institute of Medical Sciences and Research Centre
Kochi, Kerala
INDIA

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AMRITA HEALTH SCIENCES CAMPUS



AMRITA
VISHWA VIDYAPEETHAM



MISSION STATEMENT

To provide value-based education and mould the character of the younger generation through a synthesis of science and spirituality, so that their earnest endeavour to achieve progress and prosperity in life is matched by an ardent desire to extend selfless service to the society, one complementing the other.



MESSAGE FROM THE DIRECTOR

We have witnessed phenomenal growth in a short period of 22 years and today we are known the world over as a centre of excellence in healthcare, education and research.

Our 125 acre healthcare campus boasts of a vibrant mix of medicine, science and technology. By learning and applying the Amrita Model of Care, which integrates clinical practice, biomedical research and lifelong education, you will be well prepared to succeed in any medical practice setting, from private practice, to academic medicine, to global outreach healthcare. Our 670 strong faculty members, drawn from the best institutes across the world, continue to inspire young minds in developing a compassionate and holistic approach to healthcare delivery, not to mention the excellent support of our administrators, support staff and volunteers, all of whom lend their skills to the educational experience of our students.

Our goal is to give students an educational environment that is second to none. The colleges are the heart of the academic community where students can know and be known by faculty and staff where individual attention fosters intellectual, emotional and spiritual growth.

The most significant element in the establishment of Amrita is the compassion of Amma whose vision and constant encouragement were the inspiration to create this facility with the objective of relieving the suffering of individuals and their families who suffer with them. Amma's life of selfless service has helped so many, not only through curing physical illness, but also by bringing hope, clarity and peace of mind.

May Amma's blessings be continuously with us to help us sustain this growth and for attaining greater accomplishments.

A handwritten signature in blue ink, appearing to read 'Prem Nair', with a horizontal line underneath.

Sincerely,
Dr. Prem Nair
Medical Director
Amrita Institute of Medical Sciences
Operating Officer, Health Sciences Campus
Amrita Vishwa Vidyapeetham

The Guiding Light
of Amrita Vishwa Vidyapeetham

**OUR CHANCELLOR,
FOUNDER & INSPIRATION
SRI MATA AMRITANANDAMAYI DEVI**



A renowned humanitarian leader and spiritual teacher, Sri Mata Amritanandamayi is the guiding light of Amrita Vishwa Vidyapeetham. Amma's concept of education, stress on research and commitment to instilling universal values, have come together to shape an institution where the latest advancements and discoveries combine with compassion and service-mindedness. As Mata Amritanandamayi said when the State University of New York honoured her with an honorary Doctorate in Humane Letters:

"It is Amma's prayer that we develop the expansive-mindedness to embrace both scientific knowledge and spiritual wisdom. We can no longer afford to see these two streams of knowledge as flowing in opposite directions. In truth, they complement one another. If we merge these streams, we will find that we are able to create a mighty river—a river whose waters can remove suffering and spread life to all."

AMRITA VISHWA VIDYAPEETHAM

We are delighted that you are exploring the opportunities available at Amrita Vishwa Vidyapeetham (AVVP), the river of knowledge with Her Holiness Sri Mata Amritanandamayi Devi as its fount. This river finds its course across six campuses, with 15 constituent schools offering more than 207 degree programs (Undergraduate, Postgraduate and Doctoral) with a strong contingent of 1470+ faculty, 800+ PhD faculty and 20,000+ students. It is today a multi-disciplinary institution in the real sense with path-breaking research in the areas of Engineering, Medicine, Management and Communication.

Amrita Vishwa Vidyapeetham is a multi-campus, multi-disciplinary research academia that is accredited 'A' by NAAC and is ranked as one of the best research institutions in India. Amrita is spread across six campuses in three states of India - Kerala, Tamil Nadu and Karnataka, with the headquarters at Ettimadai, Coimbatore, Tamil Nadu. AVVP continuously collaborates with top US universities including Ivy league universities and top European universities for regular student exchange

programs, and has emerged as one of the fastest growing institutions of higher learning in India.

The institution is managed by the Mata Amritanandamayi Math. AVVP has adopted a credit based system in keeping with the best traditions of international universities. AVVP, with its best infrastructure, regularly updated curricula and syllabi in line with industry demands, along with gratifying corporate relations, assures academic excellence with a global outlook. AVVP is ranked along with the top institutions in India in the ivy league of Indian universities and it continues to grow from strength to strength under Amma's guidance. With the mission of offering value-based education in letter and spirit, the Institution designs the courses of study that are continuously reviewed and updated, keeping abreast with the advancements in the field. The Management is committed to creating and sustaining an ambiance that is most conducive to learning and nurturing youth who are intellectually competent and socially committed.



STATISTICS & RANKINGS



Ranking	Score
World University Ranking 2019	601-800
Asia University Ranking 2019	164
Young University Ranking 2019	201-250
Emerging Economies Ranking 2019	141



150 + Partnership
with international Universities

A GRADE
by NAAC, MHRD (2014-19)

BOARD & FACULTY



SWAMI AMRITASWARUPANANDA PURI
President, Amrita Vishwa Vidyapeetham
Vice Chairman, Mata Amritanandamayi Math



BRAHMACHARI ABHAYAMRITA CHAITANYA
Pro Chancellor, Amrita Vishwa Vidyapeetham



DR. P. VENKAT RANGAN
Vice Chancellor
Amrita Vishwa Vidyapeetham

In 2003, Amma appointed Dr. P. Venkat Rangan as the Vice Chancellor of Amrita Vishwa Vidyapeetham. Previously, Dr. Rangan founded and directed the Multimedia Laboratory and Internet & Wireless Networks (WiFi) Research at the University of California, San Diego, (UCSD) where he served as a Professor of Computer Science and Engineering for 16 years. He is an internationally recognized pioneer of research in Multimedia Systems and Internet E Commerce. In 1996, Dr. Rangan became one of the youngest faculty members to be awarded the Full Professor position at the University of California - just 7 years after his Ph.D. from U.C. Berkeley in 1989. Dr. Rangan has 85 publications in International (mainly IEEE and ACM) Journals and Conferences, and also holds 24 US Patents.

Dr. Rangan has been awarded:

- Fellow of ACM (1998): youngest to achieve this international distinction
- NSF National Young Investigator Award (1993)
- The NCR Research Innovation Award (1991)
- The President of India Gold Medal (1984)

In 1999, Dr. Rangan took a two and a half year leave of absence from UCSD to found Yodlee, Inc.. He raised about \$40 million for Yodlee from Sequoia Capital, Accel Partners, AOL, Bank of America, etc., invented online account aggregation, built Yodlee's business with major portals and banks, served as its President and CEO during the first two years, after which he hired a full management team to run Yodlee. Dr. Rangan continued to serve as Founder and Chairman of the Board of Yodlee till August 2002. Yodlee is now a multinational company with a 98% market share in online account aggregation with over 100 customers that include almost all of the top 10 portals and top 50 financial institutions of the world.

In July 2000, Internet World featured Dr. Rangan on its cover page and named him as one of the top 25 Stars of Internet Technologies.

In 2018, Dr. Rangan was recognized a "Visionary Eduleader of India" at "The Fifth Estate Summit: National Convention for Eduleaders and Edupreneurs in Higher Education" held at New Delhi in the august presence of former President of India, Shri Pranab Mukherjee, along with note education entrepreneurs and leaders, as well as academicians from all over the country.

A STUDENT'S EXPERIENCE AT AMRITA

Previously, Amrita proved to be a support for those not making it to the top colleges like IITs AND NITs. But the recent development and growth of the University has made it a top college itself. Check MHRD, National Institute Ranking Framework (NIRF) , you will see Amrita University at 8th Ranked University in India.

This is my personal experience.

It is one of the best Universities not only on paper but in practice as well. Equal opportunity is given to all students to showcase their talent. It is already good but still keeps improving in terms of academics, sports, club activities, seva, value programs etc.

The teachers are very experienced and themselves have a great academic background, with most teachers having PhDs in their subjects.

Infrastructure of all the campuses is very good with well equipped labs, canteens, hostels, and play grounds to name a few.

One thing that comes to everyone's mind when they hear about Amrita is the spiritual teaching and related subjects. But trust me, this helps a student calm down after other academic pressures throughout the semester. Moreover, many parents want their children to join Amrita mainly because of the disciplined atmosphere in the college. The motto of the college is to prepare students for entering the competitive world and find therein a place for themselves. They believe in Education for Life along with Education for Knowledge.

Co-curricular activities are encouraged here, with clubs for everything. Celebrations of most of the major festivals are done in the campus with massive participation.

Overall, a different experience for a student. Good luck and welcome to the family if you plan on joining Amrita!



WHAT OTHERS SAY...



When all our sages, saints, Vedas and Puranas have discussed about “happiness and welfare everywhere”, then the question comes, “what can be the way towards that all-encompassing happiness?” Amma has showed us that way today.

—**Sri Narendra Modi, Prime Minister of India**



Amrita Vishwa Vidyapeetham has a major role to play in transforming our society into a knowledge society through its unique value-added education system.

—**Dr. A.P.J. Abdul Kalam, Former President of India**



As a young institution that is unburdened by history and full of bold ideas for the future, Amrita Vishwa Vidyapeetham has much to teach its older counterparts. Truly you are building a world-class university for the 21st century, and my UB colleagues and I are deeply impressed by the success you are clearly already achieving.

— **Dr. John B. Simpson, President, State University of New York, Buffalo**



Amrita Vishwa Vidyapeetham has a vision that Amma created. It has various disciplines including a top medical college. Amrita wants to broaden the interactions between India and the United States, and I hope, in fact, that we can work with them in that capacity.

— **Dr. Venkatesh Narayanamurthi, Dean of Engineering and Applied Sciences, Dean of Physical Sciences, Harvard University**



When I look at what Amrita Vishwa Vidyapeetham is, its mission, the hospitals, the various campuses, there is a close synergy between what Princeton wants to do and what AVVP is doing. Our faculty will be interested in collaborative research with AVVP for the possibility of working on a real life problem.

— **Dr Maria Klawe, Dean of Engineering and Applied Sciences, Princeton University**



It is extraordinary what Amrita Vishwa Vidyapeetham has been able to accomplish in its short history. To have developed in the space of only 15 years a first-class research institution with the highest accreditation rating from the national accrediting agency is remarkable. I know of no other institution in India with a comparable record of achievement.

— **Dr Satish K. Tripathi, Provost, Academic Affairs University at Buffalo, State University of New York (SUNNY)**



What makes Amrita Vishwa Vidyapeetham students special? Western science leads to knowledge. Eastern science leads to understanding. AVVP has both Western and Eastern traditions in education.

— **Dr. Lee Hartwell, Nobel Laureate**



Amma has been a leader in expanding educational opportunity in India, particularly through the establishment of Amrita University, which in its first 15 years has become one of the most distinguished private universities in India.

— **Dr. Stephen Dunnnett, Professor and Provost for International Education, State University of New York, Buffalo**

Introducing **AMRITA HOSPITAL, KOCHI...**



India is the second most populous nation on earth. This means that India's health problems are the world's health problems. And by the numbers, these problems are staggering – 41 million cases of diabetes, nearly half the world's blind population, and 60% of the world's incidences of heart disease. But behind the numbers are human beings, and we believe that every human being has a right to high-quality healthcare.

Since opening its doors in 1998, our Amrita Hospital, Kochi (Amrita), charitable medical care stands at a whopping US\$110 million (Rs.700 crores) that has provided much needed free treatment to over 5 million (50 lakhs) deserving patients. We have treated more than 10 million (1 crore) patients across India.

The Amrita Healthcare System stands on an edifice of sophisticated care being provided with love and compassion. Today, Amrita Hospitals is recognized as one of the premier healthcare institutions in South Asia. Our commitment to affordable quality care has attracted a dedicated team of highly qualified medical professionals from across the world. The Amrita team, comprised of physicians, surgeons and other healthcare professionals, are of the highest caliber and experience.

The massive healthcare infrastructure in Kochi, Kerala with over 3.33 million sq. ft. of built-up area, is spread over 125 acres of land. It supports a daily patient volume of approximately 3500 outpatients, with 95 percent inpatient occupancy. Annual patient turnover touches an incredible figure of almost 1 million (10 lakhs) outpatients and nearly 50,000 inpatients. There are 12 super-specialty departments, 45 other departments, 4500 support staff and 670 faculty members.

The educational institutions of Amrita Vishwa Vidya Peetham, a Deemed-to-be-University, has at its Health Sciences Campus in Kochi, Kerala—the Amrita School of Medicine—the Amrita Centre for Nanosciences, the Amrita School of Dentistry, Amrita College of Nursing, and the Amrita School of Pharmacy, committed to being centres of excellence providing value-based medical education, where the highest human qualities of compassion, dedication, purity and service are instilled in the youth. Amrita School of Ayurveda is located at Amritapuri in the district of Kollam. Amrita Vishwa Vidya Peetham strives to help all students attain the competence and character to humbly serve humanity in accordance with the highest principles and standards of the healthcare profession.

...and **HEALTHCARE CAMPUS**



Established in September 2002, the Amrita School of Medicine has achieved great academic recognition from the students, community and educational fraternity as an institution providing not only world-class training but also the right perspective on life. The present School tower comprises 12 storeys with a total floor area of 120,000 sq. ft. The hospital has an additional floor area of 1,100,000 sq.ft.

Facilities

Incorporating state-of-the-art educational facilities that meet international standards, the Amrita School of Medicine is a fusion of the latest technology with core human values. The School of Medicine building houses laboratories, lecture halls and a well-furnished central library complete with an outstanding collection of the latest editions of international and Indian medical books and journals. It also provides for electronic access to many scientific and medical databases in India and abroad. An ANATOMY MUSEUM has been established with all the latest teaching devices and with elaborate models detailing the different parts of the human body.

The School offers various undergraduate and postgraduate programs like BSc, MSc, MD/MS/PG Diploma, DM/MCh, etc., as well as a five-and-a-half year program in Medicine, including a year of internship, culminating in the award of an MBBS degree. The curriculum is based on the directives of the Medical Council of India.

The course involves both theory classes and practical sessions. Clinical exposure begins in the second year with classes conducted by clinical specialists emphasizing the relevance of the basic sciences to clinical practices. Hospital postings and field visits to public health centers aim at exposing the candidate to different scenarios in which doctors in India might find themselves, and how to go about providing the best care in all the circumstances.

A commitment to the practice of medicine in its highest form is a lifelong commitment to humanity. Our resolve to be a Center of Excellence both in medical training and in the practice of medicine will well prepare eager and talented young men and women to play a key role at the forefront of their chosen professions.

ACCREDITATIONS

AWARDS



◆ British Medical Journal (BMJ) - India 2014, 2015, 2016 Health Care Award



◆ NABL Accredited Laboratories

◆ NABH Accredited Hospital Services



◆ NAAC with "A Grade"

◆ ISO 9001:2008 Certified Services

◆ National Excellence Healthcare Awards for Patient Safety and Innovation in Medical

Technology by FICCI (2016)





Student Facilities

The Health Sciences Campus of Amrita Vishwa Vidyapeetham is located at Kochi in Kerala. The campus, spread over 125 acres, is compact and yet not confined. Students will appreciate the convenience of having teaching rooms, lecture theatres and clinical skills laboratories close to their accommodation. All important support and leisure facilities too, such as the library, communication suites, student clubs, and cafeterias are all located in and around the Medical School buildings.

Student life at Amrita is more than just study. The Amrita Schools are an integral part of a vibrant community that offers an array of intellectual, cultural and recreational opportunities. A tropical climate enhances a campus lifestyle that is comparatively informal.

Accommodations

All undergraduate programs of the Health Sciences Campus are 100% residential courses providing comfortable accommodation to all students. Accommodation is as per the respective council's requirements and each student is provided with a cot, a table, a chair, and a cupboard. Hot and cold water and laundry facilities are available in every hostel for use by the residents. Every student is provided with a personal code enabling him/her to maintain a credit account for telephone calls. However, the possession and use of mobile phones is strongly discouraged inside the campus. Each hostel has a common room with cable TV and newspapers where students can meet and keep abreast of the news. There is a full-time warden based at every hostel and a security guard is on duty 24 hours a day. Amrita attaches great importance to the nature of lifestyle in the campus. Tobacco, in any form, and all other intoxicants are strictly prohibited.

Facilities

Shops within the campus include a mini supermarket that sells confectioneries, fruits, stationery, toiletries etc. Tailoring facilities, hairdressers, photocopying and photo studio shops are within walking distances of the campus. The campus has a full fledged post office counter with Speed-Post facilities, round the clock STD/ISD telecom facilities, a bank with 24-hour ATM facilities, 24-hour taxi service, a 24-hour pharmacy, an ice-cream parlour, three cafeterias, a bookshop and optical shop.

Sports

Recreational facilities at Amrita include basketball courts, football fields and an athletic track. All the hostels have their own gymnasiums and an outdoor volleyball court as well as indoor games like table tennis, chess and caroms. Amrita gives importance to sports as it is a healthy body that can house a healthy mind. Sports play an integral part in moulding and refining the character of an individual. Students are encouraged to take part in all indoor and outdoor games. Every campus has an annual sports meet.

Central Library

The library is a focal point of study in any educational institution. The total floor area is 2600 Sq.mt. The library has been organized in two floors in a multi-storied building. The fourth floor has been arranged for the post graduates and faculty with total seating for 116 users, and the fifth floor for the students in undergraduates and other allied courses with 250 seats.

Working hours – 8 am – 11.30 pm
Sundays and holidays – 2 pm-10 pm

Services Provided

Internet browsing, computer print out, photocopying, scanning, sourcing documents from external agencies, selected dissemination of information, providing guidance for using library databases for medical literature search, provide full text of articles in pdf format on request.

Resources

Books - 16,175

CD ROMs - 1412

Journals – (National) – 110

Journals – (International) – 2152

Databases – 11

Dining

Pure vegetarian food prepared under hygienic conditions is served in the student dining halls and the canteens from a central kitchen. The food menus include Indian, Chinese and Continental fare.

Prayer Halls

Amrita prides itself on being a welcoming place for students of all religious faiths and denominations. There are ample opportunities for spiritual growth through organized Satsangs, Yoga, Meditation, Seminars, Retreats and Service Projects. For the convenience of students belonging to different faiths, multi-religious prayer halls are situated near the Teaching Hospital B Block.

Life as a student has its own stresses and strains, and sometimes the need may arise to confide in, open up to, or even seek guidance from someone. At Amrita, a Gurukula system is operational wherein each student is designated a mentor/acharya to whom students can turn for help. Students are free to discuss their problems, whether they are of an academic or personal nature.



Cultural

Students at Amrita are encouraged to join one of the many clubs functioning in the campus. The art forms are well represented by music and drama societies that conduct regular intra-faculty competitions and inter-collegiate programs. There is a movie club that shows the latest movies in English, Hindi and Malayalam every Sunday in the air-conditioned Amriteshwari Hall. Those wanting to commune with nature can look forward to joining Green Friends, an initiative at Amrita to promote the environment. Students who are interested in voluntary work within the local and wider community will be able to do so in various ways through societies and programs coordinated by monastics from the Math. These activities enhance the overall development of the students, instilling in them the spirit of teamwork and oneness.

Degree, Diploma & Programmes in a Nutshell

ALLIED HEALTH SCIENCES		
BSc Medical Radiologic Technology (MRT)	MSc Biostatistics	PG Diploma in Medical Radiological Science
BSc Optometry	MSc Cardio Vascular Technology	MHA Master of Hospital Administration
BSc Physician Assistant	MSc Clinical Nutrition & Food Science	MPhil Clinical Psychology
BSc Respiratory Therapy (RT)	MSc Dialysis Therapy	Master of Public Health
BSc Intensive Care Technology (LCT)	MSc Diabetes Sciences	
BSc Operation Theatre Technology (OTT)	MSc Emergency Medical Technology	
BSc Anaesthesia Technology	MSc Medical Laboratory Technology	
BSc Cardiac Perfusion Technology (CPT)	MSc Neuro Electro Physiology	
BSc Cardio Vascular Technology (CVT)	MSc Physician Assistant (Medical Oncology)	
BSc Diabetes Sciences	MSc Physician Assistant (CVTS)	
BSc Dialysis Therapy	MSc Respiratory Therapy	
BSc Echocardiography Technology	MSc Deglutology & Swallowing Disorders	
BSc Emergency Medical Technology		
BSc Medical Laboratory Technology (MLT)		
BASLP Bachelor of Audiology & Speech Language Pathology		
BSc Neuro Electro Physiology		

Degree, Diploma & Programmes in a Nutshell

MEDICINE		
MBBS	MS Obstetrics & Gynaecology	Fellowship in Cardiac Anaesthesia
MD Anatomy	MS Ophthalmology	Fellowship in Gynaec Oncology
MD Biochemistry	MS Orthopaedics	Fellowship in Neonatology
MD Physiology	MS Otorhinolaryngology	Fellowship in Neuro Oncology & Cranial Base Surgery
MD Microbiology	DM Cardiac Anaesthesiology	Fellowship in Surgical Oncology
MD Community Medicine	DM Cardiology	PhD
MD Forensic Medicine	DM Endocrinology	
MD Pathology	DM Gastroenterology	
MD General Medicine	DM Medical Oncology	
MD Geriatrics	DM Nephrology	
MD Dermatology	DM Neurology	
MD Anaesthesiology	DM Paediatric Cardiology	
MD Emergency Medicine	DM Paediatric Neurology	
MD Nuclear Medicine	DM Pulmonary Medicine	
MD Paediatrics	DM Rheumatology	
MD Physical Medicine & Rehabilitation	MCh Cardio Vascular Thoracic Surgery	
MD Psychiatry	MCh Gastrointestinal Surgery	
MD Radio Diagnosis	MCh Head & Neck Surgery	
MD Radiation Oncology	MCh Neurosurgery	
MD Respiratory Medicine	MCh Paediatric Surgery	
MD Pharmacology	MCh Plastic and Reconstructive Surgery	
MS General Surgery	MCh Gynaecological Oncology	
	MCh Urology	
	MCh Reproductive Medicine & Surgery	

DENTISTRY
BDS
Diploma in Dental Mechanics
MDS Conservative Dentistry & Endodontics
MDS Oral & Maxillofacial Surgery
MDS Oral Medicine & Radiology
MDS Oral Pathology & Microbiology
MDS Orthodontics & Dentofacial Orthopaedics
MDS Pedodontics & Preventive Dentistry
MDS Periodontology
MDS Prostodontics & Crown & Bridge
MDS Public Health Dentistry
PhD

NURSING
BSc Nursing
MSc Nursing (Medical, Surgical, Paediatric, Psychiatric, Obstetric & Gynaecology)
PHARMACY
BPharm
MPharm
PharmD
PharmD PB
PhD
NANOSCIENCES
MTech in Molecular Medicine
MTech in Nanoscience & Technology
MTech in Nanotechnology
PhD

Departments - Broad Specialities

PRE & PARA MEDICAL	MEDICAL
Anatomy	Anaesthesiology
Physiology	Dermatology
Biochemistry	Emergency Medicine
Community Medicine	General Medicine
Forensic Medicine	Genetics
Microbiology	Geriatrics
Pathology	Nuclear Medicine
Pharmacology	Paediatrics
SURGICAL	Psychiatry
ENT	Radiodiagnosis
General Surgery	Radiotherapy
Obstetrics & Gynecology	Respiratory Medicine
Ophthalmology	
Orthopaedics	

Departments - Super Specialities

MEDICAL	SURGICAL
Cardiac Anaesthesia	CVTS
Cardiology	Gastrointestinal Surgery
Endocrinology	Gynaecological Oncology
Gastroenterology	Head & Neck Surgery
Medical Oncology	Neurosurgery
Nephrology	Paediatric Surgery
Neurology	Plastic Surgery
Paediatric Cardiology	Urology
Rheumatology	Reproductive Medicine and Surgery
Pulmoary Medicine	

Amrita School of Medicine



A commitment to the practice of medicine in its highest form is a lifelong commitment to humanity. Our resolve to be a Centre of Excellence both in medical training and in the practice of medicine will well prepare eager and talented young men and women to play a key role at the forefront of their chosen profession.



Amrita School of Medicine is founded on the highest principles, with an emphasis on service, compassion, charity and excellence through education. The blending of the vital ingredients of competence and compassion is an extension of the vision and inspiration of our founder, Sri Mata Amritanandamayi Devi, from whom we draw our strength and dedication and whose life exemplifies these high principles in every action. The nurturing of these values at the Amrita Health Sciences Campus complements a fine technical education by enhancing skills with a unique understanding and compassion for the patient. The faculty is dedicated to these sustaining values and has diligently worked on the curricula, techniques and methods that will be of the greatest help to the students.

Established in September 2002, the Amrita School of Medicine has already achieved great academic recognition from the students, community, and educational fraternity as an institution providing not only world-class training but also the right perspective on life. The present School tower comprises 12 storeys with a total floor area of 120,000 sq. ft. The hospital has an additional floor area of 1,100,000 sq.ft.

Incorporating state-of-the-art educational facilities that meet international standards, the Amrita School of Medicine is a fusion of the latest technology with core human values. The School of Medicine building houses laboratories, lecture halls and a well-furnished central library complete with an outstanding collection of the latest editions of international and Indian medical books and journals. It also provides for electronic access to many scientific and medical databases in India and abroad. An Anatomy Museum has been established with all the latest teaching devices and with elaborate models detailing the different parts of the human body.

The School offers various undergraduate and postgraduate programs like BSc, MSc, MD/MS/PG Diploma, DM/MCh, etc., as well as a five-and-a-half year program in Medicine, including a year of internship, culminating in the award of an MBBS degree. The curriculum is based on the directives of the Medical Council of India.

The course involves both theory classes and practical sessions. Clinical exposure begins in the second year with classes conducted by clinical specialists emphasizing the relevance of the basic sciences to clinical practices. Hospital postings and field visits to public health centres aim at exposing the candidate to different scenarios in which doctors in India might find themselves, and how to go about providing the best care in all the circumstances.

PRECLINICAL SCIENCES

Anatomy

Anatomy is a dynamic science, which is fundamental to clinical practice. It is of paramount importance to have clear knowledge of the structure of the normal human body and the possible variations from the developmental point of view. At the undergraduate level, the department is occupied in teaching Medical, Dental, Nursing and Pharmacy students in addition to postgraduate students of pre-clinical, para-clinical and clinical subjects. The department facilitates cadaveric dissection exercises for surgical skills development of various clinical procedures for departments like E.N.T, Orthopaedics, Neurosurgery, Plastic Surgery, etc.

PROGRAMME

- MD Anatomy

Biochemistry

Biochemistry is the language of life, the science concerned with the chemical constituents of living cells. Biochemistry encompasses the study of cell biology, molecular biology, and molecular genetics. The aim of biochemistry is to explain, in molecular terms, all the chemical processes of living cells. Biochemistry has become an essential subject in medical science for understanding the concept of mechanisms for the maintenance of normal health. The Department conducts a BSc MLT, MSc MLT course and PhD programmes. The faculty members are involved in many research projects funded by external agencies.

The tools for research in all branches of medical science are mainly biochemical in nature. The study of biochemistry is essential to understand the basic functions of the body. This study will give information regarding the functioning of cells at the molecular level.

PROGRAMMES

- **MD Biochemistry**
- **MSc Medical Laboratory Technology**
- **BSc Medical Laboratory Technology**

Physiology

Physiology is a basic medical science which deals with functions of the human body. The Department of Physiology includes four well-equipped laboratories for undergraduate teaching and for PG students. The haematology laboratory consists of modern binocular and monocular compound microscopes. The large extension Kymograph and its accessories are a special feature of the mammalian lab. It also has a Dales bath for recording intestinal movements. The clinical laboratory possesses a number of excellent static and working models of human systems including a unique seven feet tall wooden model of the human nervous system. The Research Laboratory is also provided with four single channel physiographs and two multi-channel polygraphs to record biological activities. Moreover, the departmental library has an excellent collection of the latest textbooks in physiology and allied subjects. The regular journal club and review article presentations for faculty help to update recent advances on the subject.

PROGRAMME

- **MD Physiology**

PARACLINICAL SCIENCES

Community Medicine

The Department of Community Medicine provides an innovative, rural based, primary health care oriented medical education. Value based medical education,

using a student friendly, need oriented and evidence based curriculum has been formulated. This field trains doctors to be competent to function as care providers, decision makers, communicators, community leaders, and managers. These doctors will function in the community to uplift the health of the people. The department provides cost effective primary health care and health promotion and delivery strategies characterized by equity, intersectoral coordination and community participation.

PROGRAMME

- **MD Community Medicine**
- **Master of Public Health**

Forensic Medicine

Forensic Medicine deals with the application of medical knowledge for the purpose of law. The students will learn how to handle cases of injury, poisoning, sexual assault, medico-legal autopsies and so on, document the findings, issue certificates and tender evidence in courts of law. The department has a Poison Control Centre functioning under Analytical Toxicology.

PROGRAMME

- **MD Forensic Medicine**

Microbiology

Medical Microbiology is the study of micro-organisms that cause infectious disease in humans. A thorough understanding of this subject is essential for the student to understand the natural history of infectious diseases through etiopathogenesis and laboratory diagnosis, thus complementing the treatment and control of infections in the community as well as in the hospital.

Modern teaching aids and methods are used to make learning easier and more interesting for the students.

PROGRAMMES

- **MD Microbiology**
- **BSc in Medical Laboratory Technology**
- **MSc in Medical Laboratory Technology**

Pathology

Pathology deals with abnormal changes caused by disease. The Department of Pathology supports the clinical services of the physicians at AIMS. The Department offers full diagnostic services in all areas of pathology. There is a focus on oncology, pulmonary, soft tissue, orthopaedic, endocrine, and cytologic pathology.

The Department`s partnership with the transplantation surgery programme translates pathology research into intellectual advances in transplantation. The department operates an advanced immunohisto chemistry laboratory for diagnostic application of research techniques. The haematology laboratory is equipped with the latest instruments that combine optical light scatter and impedance technologies. The Molecular Biology Laboratory undertakes specialised investigations such as PCR based analysis and HLA typing.

PROGRAMMES

- MD Pathology
- BSc in Medical Laboratory Technology
- MSc in Medical Laboratory Technology

In the first year the students rotate through the Biochemistry, Pathology and Microbiology laboratories. There are didactic lectures, regular practical and demonstration classes; but emphasis is on hands-on training in the respective fields. The second year is devoted to specialisation in any one of the laboratories (Biochemistry, Pathology or Microbiology). There are group discussions and seminars with an introduction to bio-statistics and research methodology. Most of the time is devoted to hands-on training in advanced laboratory techniques, including automated versions. Throughout the whole course, students are in the clinical laboratories which also includes night duty.

Pharmacology

Pharmacology is the detailed scientific study of drugs, particularly their actions (beneficial and harmful) on living animals and man at the organs` cellular and molecular levels. The main objective is to optimise drug therapy. The department has set the following goals for the medical students:

- Assimilate the concept of "Rational Drug Therapy"
- Practice "Rational Use of Drugs"
- Develop good prescribing skills
- Understand the essence of "Essential Drug Concept" and be competent to make/modify the essential drug list.
- Imbibe "Medical Ethics" and uphold the principles in patient care, drug development and research.

CLINICAL SCIENCES

Departments of Medicine

Cardiology-Adult & Paediatric

The Department comprises the adult and paediatric divisions for medical and surgical services. The Cardiology Department has set the benchmark for cardiovascular care in South India. Approximately 10,000 new patients are treated annually.

The paediatric cardiac programme is now among the largest in India in terms of number of patients undergoing surgical and non-surgical treatment of congenital heart disease. The programme caters to patient referrals from all over India in increasing numbers. Children from Uganda, Tanzania, Ethiopia, Middle East, and from neighbouring countries such as Maldives, Bangladesh and Mauritius have also benefited from the programme. Over 3000 new children with heart disease visit the Paediatric Cardiology clinic annually.

PROGRAMMES

- DM In Cardiology
- DM In Paediatric Cardiology
- BSc In Cardiovascular Technology
- BSc in Echocardiography

■ MSc In Cardiovascular Technology

Centre For Digital Health

In an effort to impart state of the art healthcare education to learners at all levels, AIMS has established a Centre for Digital Health (CDH), which is a centre of excellence for the provision of multidisciplinary medical education of an international standard. It focuses on improving patient care at the bedside by a judicious combination of enhancing basic and advanced clinical skills, procedural aptitude, development of electronic medical records and the use of point-of-care decision support modalities. These facilities will be made available not only to the students and faculty at AIMS but also to trainees and physicians from elsewhere in India and abroad. The two primary components of CDH are the Institute of Medical Informatics and Multimedia Education (IMIME) and the Department of Telemedicine.

Centre for Digital Health (CDH) includes:

- Division of Informatics
- Division of Medical Multimedia
- Center for Advanced Surgical Education (CASE)
- Learning Resource Center (LRC)
- Research and Technology Assessment Unit
- Division of Continuing Medical Education and International Programmes
- e-Learning Centre
- Clinical Practice Unit
- Virtual Reality Lab

The Department of Telemedicine at Amrita is one of the most active amongst such departments in the country, providing clinical consultations and facilitating educational interactions between Amrita and other Indian as well as international centres.

Endocrinology & Diabetology

The Endocrinology Department at Amrita is the only one of its kind in the state of Kerala. The department provides full facilities for investigation and treatment of endocrine problems in adult, paediatric, and adolescent patients (including in-house hormone assays) and all complications of diabetes.

The Endocrinology Department consists of a dedicated and well-qualified team of healthcare professionals comprised of consultant endocrinologists, an endocrinology specialist, a diabetic foot surgeon, diabetic educators, a physiotherapist, a psychologist, podiatry assistants, a medical social worker, a dietician, and other support nursing, administrative and research staff.

PROGRAMMES

- DM Endocrinology
- MSc Diabetes Sciences
- BSc Diabetes Sciences

Gastroenterology

This Department has facilities for the early detection, diagnosis, and treatment of complex gastrointestinal, liver, gallbladder, and pancreatic diseases. The core units of the Institute are the Department of Gastroenterology and Hepatology and the Gastrointestinal Surgery Department. The departments of Imaging, Interventional Radiology, Nuclear Medicine, Oncology and Lab Services also work closely with the Digestive Diseases group.

The Department of Gastroenterology is comprised of the following services and areas of speciality:

- Gastroenterology/Hepatology
- Liver Centre
- Centre for biliary and pancreatic disorders
- Centre for luminal disorders
- Diagnostic and therapeutic endoscopy and ERCP



- Centre for swallowing and oesophageal disorders
- Gastrointestinal haemostasis
- Cancer detection and palliation unit
- Paediatric gastroenterology
- Intensive care services
- Tele-medicine and tele-education services

PROGRAMMES

- **DM Gastroenterology**
- **Therapeutic Endoscopic Fellowship**

General Medicine

The Department of Internal Medicine at the Amrita School of Medicine is one of the premier departments of the Institution, bringing together an elite cadre of clinicians, investigators and educators in one of the world's top medical schools. The Department has 35 full-time faculty members and is embedded in a remarkable basic science environment at the Health Science Campus at Amrita, Kochi with a collaborative culture that affords numerous opportunities for interdisciplinary and translational research.

PROGRAMME

- **MD General Medicine**

Geriatric Medicine

The expectancy of life has increased significantly in the last few decades. The trend is likely to persist in the coming years, and expectancy of life at birth may well surpass 80 years in most countries of the world, including India. Our society is rapidly undergoing change. Increasingly, women, who are the traditional caregivers for the elderly, are taking to work. Many in the working generation leave the state in search of jobs. So we are faced with a situation where in the elderly are increasing in numbers and living longer while the number of care givers are rapidly decreasing. This is reflected by a rapid increase in old age homes.

The old age homes for the most part do not offer anything by the way of healthcare maintenance. The problem is compounded by the lack of adequate insurance coverage for the elderly. To meet this acute need of comprehensive geriatric assessment, Amrita hosts a separate Geriatric Department with a team of healthcare personnel—geriatrician, geriatric nurses, medical social workers, geriatric physiotherapists, occupational therapist, speech therapist, nutritionist etc. This is the first of its kind in India which started functioning in January 2001. The benefit for the comprehensive geriatric consultation is that the patient can meet all the team members at the same time during their visit. Geriatric medical care differs from usual medical practice because the focus is on preservation of function and improving the quality of life rather than on investigating, diagnosing, treating and curing specific diseases. This means that the Geriatrician must deal with the patient's social and psychological problems as well as his/ her medical problems and also frequently work with the family or caregivers who are assisting the older person.

PROGRAMME

- **MD Geriatrics**

Medical Oncology

Medical Oncology provides medical expertise for multidisciplinary programmes for the treatment and prevention of solid tumours and haematological neoplasms in adults and children. Both solid tumours and haematological malignancies are managed in the Centre. Facilities are available to undertake outpatient chemotherapies in a specialized day care unit. Specialized methods of administering chemotherapy include the use of catheters and chemo ports. In addition to routine chemotherapies, autologous and allogeneic bone marrow transplantation services will be available in the near future. Management of all haematological problems are also provided.

PROGRAMMES

- **Fellowship in Paediatric Oncology**
- **Fellowship in Clinical Haematology**

- Fellowship in Transfusion Medicine

- DM Medical Oncology

Nephrology

The Nephrology Department provides comprehensive health care for patients with different types of renal (kidney) diseases. Acute and chronic renal diseases and renal problems due to diabetes mellitus, hypertension, stone disease, infections, hereditary illnesses and poisons are diagnosed and managed. The Nephrology Department also works closely with the AIMS Solid Organ Transplant Programme.

PROGRAMMES

- DM Nephrology

- MSc in Dialysis Therapy

- BSc in Dialysis Therapy

The course is run by the Department of Nephrology, along with assistance from various other departments and specialities.

During the course, the candidates are taught:

- The relevant medical aspects of patients with kidney failure
- The technique of dialysis
- Functioning and maintenance of dialysis machines
- Patient care during dialysis

Candidates undergo practical training in the hospital and would have to stay in the hospital premises. The working hours would be decided by the department. The degree certificate would be issued only after successful completion of internship.

Neurology

The Department of Neurology provides care to patients with diseases of the brain, spinal cord, peripheral nervous system, and muscle-related diseases and conditions utilising state-of-the-art technology and a world-class medical team. It includes the following disciplines:

- Clinical Psychology
- Cerebrovascular Diseases (Stroke) Centre
- Epilepsy Centre
- Headache Service
- Movement Disorders and Gait Service
- Neuromuscular Service
- Comprehensive Neuro Rehabilitation
- Clinical Neurophysiology Laboratory
- Speech Therapy
- Sleep Medicine
- Paediatric Neurology

Formally trained and experienced specialists are available for consultation and management of neuro behavioural and memory disorders, neuromuscular diseases, cerebrovascular disease, movement disorders, seizure disorders, headache, paediatric neurology and sleep disorders.

The Neurology Department provides:

- Compassionate, tertiary level, state-of-the-art medical care to patients with neurological diseases
- Comprehensive investigations of neurological disorders
- An environment conducive for basic and clinical research
- Training for neurological and rehabilitation doctors
- State-of-the-art diagnostic facilities



- Diagnostic services include:
 - Non-invasive vascular testing
 - Magnetic resonance spectroscopy
 - Functional magnetic resonance imaging
 - Cerebral angiograph
 - Nerve conduction study
 - Electromyography (EMG)
 - Electroencephalography (EEG)
 - Poly sonnography (sleep study)

These imaging services offer capability for digital storage and facilities for remote site access.

PROGRAMMES

- **DM Neurology**
- **MSc in Neuro Electro Physiology**
- **BSc in Neuro Electro Physiology**

The course in Neuro Electro Physiology enables the students to assess the patient and plan various electro-diagnostic procedures and implement them. The candidate, thus trained is called a Neuro Technologist and is an integral part of the neurology team.

Pain and Palliative Medicine

Pain and Palliative Medicine is one of the youngest branches of modern medicine. It is the active total care of persons suffering from advanced and non-responsive diseases as well as their families. It is concerned with quality of life, not only quantity, and addresses physical, psychological, social and spiritual aspects of suffering. It seeks to provide total care for people suffering from cancer or chronic non-cancerous ailments.

Cardio Vascular Thoracic Surgery

The Adult Cardiac and Vascular Surgery Programme at AIMS is one of the

busiest programmes in the country. Over 3000 cardiac surgical operations are performed annually. The operations performed include coronary artery bypass grafting, heart valve repair and replacement and operations for congenital heart defects in adults.

PROGRAMMES

- **MCh CVTS**
- **BSc in Cardiac Perfusion Technology**

The BSc course in cardiac perfusion technology enables a student to undertake cardiovascular perfusion for a patient undergoing cardiac surgery. The candidate thus trained is called a perfusionist who is an integral part of the cardiac surgical team.

Gastrointestinal Surgery

The AIMS Department of Gastrointestinal Surgery has a comprehensive surgical programme focusing on:

- Oncological surgery of the GI tract
- Pancreatico-biliary surgery
- Gastric and oesophageal surgery
- Liver transplant
- Advanced laparoscopic surgical procedures
- Specialised colorectal surgery including sphincter saving, stapled and pouch procedures
- Intra-abdominal vascular reconstructions
- Retroperitoneal tumour excisions
- Intra-abdominal trauma

The operating rooms are one of the best equipped in the country with advanced facilities such as a dedicated C-arm image intensifier, harmonic scalpel, argon beam coagulator, CUSA, daVinci Surgical Robot, and intra-operative ultrasound and endoscopy.

PROGRAMMES

- **MCh Gastrointestinal Surgery**
- **Post Doctoral Certificate Course in Vascular Surgery**
- **Post Doctoral Certificate Course in Hepatobiliary/Pancreatic Surgery**

General Surgery

The Department of General Surgery is geared to offer teaching programmes for both undergraduates as well as postgraduate students. Computer assisted teaching aids on clinical examination and operative procedures are being generated. Research activities in several areas are already on. Video conferencing facilities will enable students sitting in the auditorium to see live transmission of surgical procedures and interact with the faculty at the same time.

PROGRAMME

- **MS General Surgery**

Head & Neck Surgery

The Department of Head and Neck Surgery is organized as a multidisciplinary team, supported by the most modern diagnostic and treatment infrastructure to deal with all major problems arising in the head and neck region. This is the first of its kind clinical service, which brings under one umbrella a multidisciplinary team of specialists in the fields of Head and Neck Surgery, Plastic Surgery, Maxillofacial Surgery, Neurosurgery and Otorhinolaryngology for the management of complex ailments of the head and neck region.

Amrita offers a three year advanced Fellowship in Head and Neck Surgical Oncology in conjunction with Roswell Park Cancer Institute, Buffalo, New York and Memorial Sloan Kettering Cancer Institute, New York, leading to Fellowship from Amrita Vishwa Vidyapeetham. The first and last year will be spent at Amrita in India and the second year will be spent in New York. The fellow will be involved in all aspects of multidisciplinary management of head and neck cancer, skull base surgery, and reconstructive microsurgery.

PROGRAMMES

- **MCh Head & Neck Surgery**
- **MSc Deglutology and Swallowing Disorder**

Neurosurgery

Neurosurgery is the speciality concerned with the surgical treatment of diseases of the nervous system composed of the brain, spinal cord and spinal column, as well as the nerves that travel through all parts of the body.

The Department of Neurosurgery at Amrita is fully equipped to perform all types of surgeries for a wide range of illnesses. These include:

- Congenital diseases of the brain and spine and other illnesses affecting children
- Tumours of the brain, spine and spinal cord
- Vascular diseases such as aneurysms and vascular malformations
- Degenerative disc and other spinal diseases
- Instrumentation of the spine and the crano-vertebral junction
- Diseases of the pituitary gland
- Stereotactic surgery
- Surgery for epilepsy and movement disorders
- Stroke and haemorrhage in the brain and spinal cord

The department is supported by state-of-the-art dedicated neurosurgical operation theatres, equipped with a Carl Zeiss OPMI NC4 Operating Microscope, a Karl Storz Neuroendoscope, a Midas Rex drill system, a ValleyLab Ultrasonic Surgical aspirator, a Siemens C-arm with facility for DSA, Codman and Aesculap operating instruments, and a Leksell Stereotactic frame. A dedicated Neurosurgical Intensive Care Unit provides comprehensive care for postoperative and acutely ill patients. The Department also now offers stereotactic radiosurgery in connection with Radiation Oncology and Medical Physics.

PROGRAMMES

- **MCh Neurosurgery**
- **Fellowship in Paediatric Neurosurgery**
- **Fellowship in Neuro-Oncology**
- **Fellowship in Neurovascular Surgery**

Paediatric Surgery

Department of Paediatric Surgery takes care of children from day one to seventeen years of age. All the facilities to take care of surgical babies are available under one roof. A well-experienced team of doctors is available to take round the clock care of children. All types of open and endoscopic procedures are performed in the department. Excellent supportive care in the form of a tertiary care NICU is also available for sick and critical neonates.

PROGRAMME

- **MCh Paediatric Surgery**

Plastic & Reconstructive Surgery

Plastic and Reconstructive Department deals with restoration of forms and functions of various parts of the body. Plastic Surgery includes Micro Surgery, Cancer Reconstruction, Management of Burns, Hand Surgery, various Cosmetic Surgery and many others. We are the pioneer department to conduct first double hand transplants in India and the only department with such a service in the whole of South Asia

PROGRAMME

- **MCh Plastic and Reconstructive Surgery**

Vascular Surgery

(see Gastrointestinal Surgery, page 33)

Anaesthesiology

The Department of Anaesthesiology and Critical Care Medicine offers consultations to referring patients in all areas of anaesthesia and critical care as well as chronic and acute pain management.

The department is equipped to provide anaesthesia during a full range of surgeries and is also a primary component of the Trauma Center Team, performing airway management, pulmonary and cardiovascular assessment, patient resuscitation, and follow-up care of patients in the intensive care units.

Active Undergraduate/Postgraduate teaching and research opportunities are available.

PROGRAMMES

- **DM Cardiac Anaesthesia**
- **One year post doctoral certificate course after MD/DNB Anaesthesiology**
- **Fellowship in Cardiac Anaesthesia**
- **Two year fellowship programme after MD/DNB Anaesthesiology**
- **MD Anaesthesiology**
- **MSc in Respiratory Therapy**
- **BSc in Respiratory Therapy**
- **BSc Anaesthesia Technology**

The Amrita Institute of Medical Sciences has 28 operation theatres and 270 intensive care beds, with state-of-the-art equipment giving students exposure to the most modern techniques in critical care.

Departments of Medicine

Dermatology

The Dermatology Department offers procedures and services, both investigative and curative, pertaining to general dermatology, cosmetic dermatology and



venereology. Comprehensive consultation and treatment is provided for both outpatients and inpatients covering all dermatological conditions including:

- General Dermatology
- Cosmetology
- Sexually transmissible diseases
- Leprosy

PROGRAMMES

- MD Dermatology

Laboratory Medicine

Laboratory services at Amrita are dedicated to clinical service, research and teaching.

The Clinical Laboratories perform a large range of diagnostic laboratory analysis in hematology, immunology, microbiology, transfusion medicine, genetics, metabolism, toxicology and chemistry.

Biochemistry

The Biochemistry Unit conducts automated assays on Olympus automated analyser (2700) and Hitachi 912 and two Hitachi 911s. These systems perform fully automated, computerized, random access chemistry analyses that utilize a variety of technologies. There are two types of photometric assays (end point and rate) on these instruments for assaying parameters such as glucose and parameters for kidney and liver function and risk factors for coronary artery disease. Proteins such as immunoglobulins, complement fractions, glycosylated hemoglobin and microalbumin are assayed by immunoturbidimetric methods.

Cytology

Cytology, more commonly known as cell biology, studies cell structure, cell composition, and the interaction of cells with other cells as well as the larger environment in which they exist. Cytology can also refer to cytopathology, which analyzes cell structure to diagnose disease. Microscopic and molecular studies of cells can focus on either multi-celled or single-celled organisms.

Haematology

The Laboratory manages patients with a whole variety of haematological conditions and diseases. The majority of these individuals are cared for as outpatients in one of our clinics; however, some patients who require complex or intensive treatment, or who are unwell, are managed as inpatients as well. The ward nursing staff are all highly trained and experienced in the management of haematological diseases and work closely with the medical staff and other health care professionals to provide a high quality service to patients and their families in our effort to improve the treatment of, and knowledge about, haematological cancers by participating in ethically approved clinical trials and other studies.

Histopathology

Pathology being the study of disease and disease processes, the Department of Pathology helps in identifying the exact disease, its nature and possible cause through study of tissues and cells removed from the diseased part of the body. The correct and effective treatment is decided on the basis of this identification or The Final Diagnosis. The department has two units, Histopathology which examines structural changes due to disease in tissues, organs or their parts, and Cytopathology which tests for changes in cells constituting the tissues.

Human Cytogenetics

The Cytogenetics Laboratory was established in January 2006 and is involved in research and academic activities and provides state-of-the-art genetic diagnostic services to the patients attending AIMS and other hospitals. The Department of Human Cytogenetics offers comprehensive diagnostic services including high-resolution chromosome analysis and Fluorescence In Situ Hybridization (FISH). The laboratory performs FISH analysis for many genetic disorders and is active in the area of cancer cytogenetics. The laboratory is equipped with a colour imaging system and computerized karyotyping system. This not only enables a broader spectrum of our services and a substantial shortening of turn around time of the results, but also provides the referring physician with higher quality of results.

Metabolic Laboratory

Our Metabolic Diagnostic Laboratory is a full-service laboratory specializing in the diagnosis of inborn errors of metabolism. The Lab uses cutting-edge techniques of gas chromatography-mass spectrometry and nuclear magnetic resonance imaging for metabolite analysis and clinical diagnoses. Enzymatic analyses in red and white blood cells as well as cultured skin fibroblasts for diagnosis of enzyme-deficient disorders are available. All reports include an interpretation and suggestions for further testing and treatment. Consultations can be done with our staff on the results.

Microbiology

Microbiology provides services for the diagnosis of infectious diseases of a bacterial, viral, parasitic, fungal or tubercular nature. In addition to routine diagnostic methods (cultural and microscopy), automated systems aid in the rapid detection of infectious agents in blood or body fluids. Automated systems for identification of micro organisms and their susceptibility to antimicrobials further expedite reporting which may be life-saving for patients. Special microscopy (fluorescent and dark-field) helps in rapid diagnosis of tuberculosis and viral infections. Serological investigations are also performed for a variety of infectious agents (including viral agents such as HIV and Hepatitis viruses).

Molecular Diagnostics

The Department of Molecular Biology was established during January 2002. The department started functioning with molecular diagnosis of infectious diseases and HLA tissue typing for transplant programme. This is the only lab in the state meeting the International standards for a molecular diagnostics facility. Cross matching and tissue typing was started for the first time in the entire state of Kerala. The method is more accurate and provides more information on the HLA antigens. Gene testing was started with thrombophilia genetics wherein Factor V Leiden and Prothrombin genes are analyzed for their mutations.

Serology

Serology is the science dealing with the serum component of blood in regards to its reactions and properties. Our Serology Laboratory is a high volume

laboratory dedicated to performing diagnostic tests for our patients as well as for other hospitals.

It provides a full range of assays, which can be grouped in seven major areas:

- Serological markers of autoimmune disease
- Analysis of the complement system
- Serodiagnosis of infectious disease
- CSF markers of multiple sclerosis
- Special protein studies for monoclonal protein detection
- Diagnosis of immunodeficiencies
- Allergen testing

Toxicology and Poison Centre

Analytical toxicology is the detection, identification, and measurement of foreign compounds (xenobiotics) in biological and related specimens. Analytical methods are available for a very wide range of compounds. These may be chemicals, pesticides, pharmaceuticals, drugs of abuse and natural toxins.

Analytical toxicology can assist in the diagnosis, management, prognosis, and prevention of poisoning. Additionally, analytical toxicology laboratories may be involved in a range of other activities such as the assessment of exposure following chemical incidents, therapeutic drug monitoring, forensic analysis and monitoring for drug abuse.

The Toxicology Department offers unique facilities in the area of toxicology (poisons and poisoning) to all hospitals, government doctors, and private practitioners of Kerala state and neighbouring regions. This is the first time that such a department has been started in a hospital in the entire state of Kerala, and has been recognized by the World Health Organization as one of four functioning Poison Centres in India.

Medical Physics

The Department of Medical Physics provides scientific and technical services mainly to the following departments:

- Department of Radiation Oncology
- Department of Radiology
- Department of Nuclear Medicine
- Amrita School of Dentistry
- All other Radiation users in the Amrita Institutions

The unit comprises eight Medical Physics faculty, and has responsibilities for the areas of Radiation Dosimetry, Quality Control of all radiation producing equipment, Treatment Planning systems, Software Control, Acceptance Testing and Commissioning of Radiation Producing Equipment, Maintenance of all radiation producing and radiation measuring equipment in proper calibration, and Radiation Safety.

Medical Physics provides Clinical Radiotherapy Physics Services to approximately 2,100 new cancer patients a year and also monitors accurate delivery of all treatments in Radiation Oncology.

PROGRAMME

- **PG Diploma in Medical Radiological Science (PGDMRS)**

Medical Statistics

The discipline of Biostatistics has contributed substantially to the development of health, medical and biological sciences, and has emerged as an important tool for research. By applying various statistical methodologies, a variety of easily applicable diagnosis, treatment and prognosis methods have been developed with scientific validity, and many diseases and health conditions have been understood and dealt with appropriately. Statistical methodologies form the strength of any research study so as to make valid judgements and conclusions. Statistical design and analysis methods are very widely used in Clinical Trials, Pharmacology, Genetics, Biotechnology, Basic Sciences, Epidemiological

studies, Demography, Quality Control of Medical and Biological equipment, Medical Diagnosis and Prognosis and Health Economics. Any research work is incomplete without treating the data statistically and interpreting the results with scientific and statistical reasoning and evidence. Its importance in Public Health administration in identifying causative factors of various diseases and identifying health priorities and proper allocation and utilisation of the available budget appropriately and judiciously has also been well recognized now. There is an ever growing demand for this subject due to all these reasons.

Statistician plays a major role in research studies right from the planning stage till the report is prepared. In the past, as well as in the present, postgraduate education in Statistics in most of the universities in our country is mostly on the theoretical aspects. Topics on practical aspects covering examples on the application of statistical methods on different fields, especially on medical problems, are very limited. Hence, it is natural that students who are not exposed to the applications of statistical methods to medical and health problems find it difficult when they join medical colleges or medical research institutes for employment.

For that reason, it becomes essential to provide appropriate professional education in Biostatistics to the candidates interested in pursuing a career in medical education and research. Such courses are essential for improving the quality of teaching Biostatistics to the medical students and also the quality of research work being carried out in medical and health research institutions. Such courses will be highly beneficial to the young statisticians in advising the medical and health researchers in designing their research projects scientifically, in maintaining the quality of data and its management and in analysing the data applying appropriate statistical methods and also in the interpretation of the results obtained, meaningfully and validly.

With this background a postgraduate course of two years duration was started at Amrita Institute of Medical Sciences for the benefit of those students who would like to specialize in Biostatistics after their graduate/postgraduate courses in Statistics or Mathematics with Statistics.

PROGRAMME

■ MSc In Biostatistics

Molecular Medicine

Amrita has established a world class, clinical and scientific research centre for Molecular Medicine. The Centre is pursuing basic and translational research of the highest quality building on the current research activities at Amrita together with existing infrastructure facilities, and is developing biomedical research as applicable to medical problems.

Nuclear Medicine

The Department of Nuclear Medicine at Amrita is an established branch of medicine that uses radioisotopes for diagnostic imaging and therapy. Nuclear medicine imaging, or scintigraphy performed with a Gamma camera, provides physiological information as an adjunct to conventional imaging technology and is of tremendous diagnostic value to many specialities. The radioisotope tagging needed for these investigations is performed in the nuclear medicine pharmacy (Hot Lab). The following tests are performed using our state-of-the-art, dual head Gamma camera: MIBI stress/rest myocardial perfusion SPECT scan, MUGA scan, renal cortical scintigraphy, captopril renal scintigraphy, cerebral perfusion scintigraphy, RBC scintigraphy, liver spleen colloid scintigraphy, milk scan, oesophageal and gastric motility studies, hepatobiliary scintigraphy, whole body skeletal scintigraphy, gallium and iodine 131 scintigraphies. Radio iodine therapy is an important therapy modality in management of hyperthyroidism and thyroid carcinoma. Intra operative parathyroid and sentinel node detection is also performed, using a cordless Gamma probe.

PROGRAMME

■ MD Nuclear Medicine

PET MRI Scanner

Early stage cancer detection is the main aim of most of the existing diagnostic procedures in the field of modern medicine. Although anatomical (structural)

investigations like CT, MRI, etc. are more commonly and widely performed, physiological (functional) nuclear medicine gamma camera investigations are more sensitive to detect early cancer.

The ultimate investigation to detect early cancer is PET-Positron Emitting Tomography. Simultaneously performing an MRI scan and fusing these two scans-PET MRI scan, further enhance PET scan's cancer detection capability.

This sophisticated and technologically advanced scan is performed on a PET MRI scanner. A state-of-the-art PET MRI scanner has been installed in the Department of Nuclear Medicine, the first of its kind in the state of Kerala.

A PET scan is performed by injecting minute amounts of a radioactive substance i.e. 18 Fluoro Deoxy Glucose (18 FDG) which has a structural and functional similarity to glucose, the substrate of any living cell. It is a phenomenon that cancerous cells concentrate, utilize more glucose thereby they show increased concentration of 18 FDG. While even the smallest cancer focus is detected by a PET study, the simultaneously acquired MRI scan helps to localize precisely to a particular organ (like lung tissue, lymph nodes, bones, etc.).

PET MRI is a whole-body imaging procedure, clinically proven, cost-effective and safe method used in the staging, follow-up for most cancers, including lymphomas, lung, colorectal, gynaecological, head, neck and breast cancers, etc. It is also used to evaluate treatment response to various chemotherapy regimes and radiotherapy in cancer patients. PET MRI scan also has immense potential in the Radiotherapy planning of a patient.

Hailed as the "Investigation of this century," PET MRI has revolutionized the cancer care and the availability of this PET MRI scanner in Amrita will help the cancer specialists of our state to provide the best cancer cure care.

Apart from being primarily used to detect cancer, PET MRI is also very helpful in the detection of surgically curable seizure ("fits") focus in the temporal lobe of the brain. PET MRI has immense value in evaluation of fever of unknown origin (detection of unknown infection focus) and also in the accurate assessment of viable heart muscle after a myocardial infarction (heart attack) before proceeding for a high-risk coronary bypass surgery (CABG).



Neonatology

The Division of Newborn Services commenced functioning in April 2002. Our Neonatology Department has been reputed to be the most technologically advanced unit in the country. The Neonatal Intensive Care Unit is state-of-the-art with 24 beds, 9 ventilators and all types of warmers. The ventilators have all high frequency options. Babylog 8000 HFO, SLE 2000 HFO+ and Bubble CPAP are the other equipments in the Neonatal ICU. Volume ventilation is done in larger babies with Siemens 300C, Nitric Oxide delivery systems are incorporated with Siemens 300C and also with separate stand alone units. Complex monitoring of all ventilated babies includes invasive blood pressure monitoring and spirometry. Capnography is used in selected cases and an in house blood gas analyzer adds to the ergonomics of the unit.

- Fellowship in Neonatology

Obstetrics and Gynaecology

The Department offers all the routine obstetrics and gynaecology services. In addition, the Department manages high-risk pregnancy by prenatal diagnostic testing like chorion villus sampling, amniocentesis, foetal colour doppler, and velocimetry studies. Cancer screening for perimenopausal women using colposcopy and colour doppler studies are also conducted. We routinely perform all endoscopic surgeries including hysteroscopy and laparoscopy.

PROGRAMMES

- MS Obstetrics and Gynaecology

Ophthalmology

AIMS Ophthalmology Service offers state-of-the-art facilities for complete examination, diagnosis and treatment of all ocular diseases in adult and paediatric patients. It has the finest equipment available in ophthalmic care including Humphrey field analyzer, ultrasound A and B scan, YAG laser and Visupac 450 digitised fundus camera for retinal imaging and fluorescent angiography and optical coherence tomography (Syscan Version IV), 532mm laser for retinal diseases.

PROGRAMMES

- MS Ophthalmology
- BSc Optometry

Orthopaedics

The Orthopaedics department is an acclaimed resource for treating muscle, bone, and joint disorders. Areas of special emphasis include arthritis, joint replacement, spine surgery, sports medicine, hand, foot and ankle, orthopaedic oncology, trauma, and paediatric orthopaedics. Our orthopaedic surgeons have diverse expertise and are committed to provide effective solutions for people with a wide range of orthopaedic problems from broken bones to spinal disorders, from crippling arthritis to sports medicine. These services include:

- Spine Surgery
- Arthritis Care
- Joint Replacement Services
- Sports Medicine and Arthroscopy
- Musculoskeletal Tumour Surgery and Reconstruction
- Physical Medicine and Rehabilitation
- Orthopaedic Trauma
- Children's Orthopaedics

PROGRAMMES

- MS Orthopaedics

Otorhinolaryngology (E.N.T.)

The Department of Otorhinolaryngology, Speech Pathology and Audiology is one of the most well equipped departments with experienced faculty and instruments. Otorhinolaryngology, as it stands now, is not merely dependent on routine outdoor evaluation and conservative management as it used to be in the past. The department has adjusted well with the advancement of medical technology. With the advent of modern day telescopes, operating

microscopes and lasers, the department now handles various ear-nose-throat and neck disorders efficiently and precisely.

The department has state-of-the-art microscopes to perform micro ear and micro laryngeal surgeries including cochlear implant.

Speech Pathology and Audiology is associated with the Department of Otorhinolaryngology. There are nasal and nasopharyngeal endoscopes for diagnostics and video endoscopy facilities for all types of endoscopic sinus surgeries including transnasal pituitary and surgery for CSF Rhinorrhoea.

PROGRAMMES

- **MS Otorhinolaryngology**
- **Bachelor of Audiology and Speech Language Pathology (BASLP)**

Paediatrics

The Department of General Paediatrics offers comprehensive primary well-child and ill-child care as well as consultation.

The division provides medical care for children in both inpatient and outpatient settings, including:

- Paediatric Primary Care Centre
- Diagnostic Clinic
- General Paediatric inpatient services
- Vaccination
- Certified baby friendly hospital

A multidisciplinary team of general paediatricians, subspecialty consultants, paediatric nurses, nutritionists and social workers also provides general paediatric care and coordination of subspecialty services to children with special needs due to chronic illnesses and multiple handicaps.

PROGRAMMES

- **MCh Paediatric Surgery**
- **MD Paediatrics**

Physical Medicine & Rehabilitation

Rehabilitation is the tertiary phase in the treatment of all human sufferings. The Department of PMR caters to rehabilitation services for patients. The Physiatrists determine treatment plans for the rehabilitation of patients after acute problems are settled. Physiotherapists and Occupational therapists carry out the work of rehabilitation as directed by the Physiatrist. The major work of this department is in association with Departments of Orthopedics, Neuro Medicine, Neuro Surgery, Pediatrics including Neonatology, and other medical and surgical departments. The proposal to expand Neuro Rehabilitation and establish an artificial limb centre to serve the needs of patients are under active consideration. Twenty-one Physiotherapists and Occupational Therapists are available in the department.

PROGRAMMES

- **MD Physical Medicine & Rehabilitation**

Podiatric Surgery

The Podiatry Centre provides comprehensive treatment approach to all foot problems in diabetic patients. The service is run by a doctor trained in the treatment of chronic, diabetic foot ulcers, a chiropodist, and vascular surgeons who provide services like angioplasty and by-pass surgery for patients with blocked arteries in their feet. Regular preventive care classes are also held.

PROGRAMME

- **Fellowship in Podiatric Surgery**

Psychiatry

There has been a growing need for mental health and psychological services both from within the hospital and outside. These services were available in the Departments of Psychiatry for the last few years.

In order to increase the range and provide more specialized services, an independent department of Clinical Psychology was also created.

PROGRAMMES

- MD Psychiatry
- MPhil Clinical Psychology

Pulmonary Medicine

The Department of Pulmonary Medicine is the most comprehensive diagnostic and treatment resources in this area. The centre for pulmonary medicine undertakes the prevention early detection diagnosis and treatment of variety of pulmonary diseases in adults and children, and is designed to perform patient evaluation using a team approach that spans multiple sub specialities. The departmental team works together to provide comprehensive inpatient and outpatient care. Dedicated Intensive Respiratory Care for Critically Ill Patients.

Comprehensive pulmonary medicine programmes include specialized treatment of specific diseases such as Asthma, Chronic Obstructive Pulmonary Disease, Interstitial Lung Disease, Cystic Fibrosis, Occupational Lung Diseases, Lung Cancers and Sleep Disordered Breathing. Pulmonary Rehabilitation and dedicated Smoking Cessation Clinic Service are provided.

The diagnostic facilities in the department include Advanced Pulmonary Function Testing – Spirometry-Exercise Challenge (PFT), Diffusion Study (DLCO), Body Plethysmography, CPET (Cardio Pulmonary Exercise Test), 6MWT Walk Test and ABG (Arterial Blood Gas Analysis).

The Diagnostic Facilities of Advanced Bronchoscopy (Video Bronchoscopy for TBNA, TBLB and Tissue Biopsy and EBUS TBNA. The interventional facility for diagnostic and therapeutic Rigid Bronchoscopy, Airway Stenting and Tumor Debulking, Mini Probe Radial EBUS, Cryo Therapy and Argon Photo Coagulation and Thoracoscopy Procedures.

The facility for Allergy Testing – Allergy Skin Prick Test and RAST, Sublingual Immunotherapy, Sleep Study (Polysomnography) and CPAP and NIV Titration for Sleep Disorder Assessment. Spiral and higher resolution CT Guided Imaging Biopsy, Ventilation Perfusion scans for pulmonary embolism.

PROGRAMMES

- DM Pulmonary Medicine

TB and Respiratory Medicine

The TB and Respiratory Medicine Department deals with common chest diseases including tuberculosis. The department undertakes prevention early detection and treatment of various chest conditions. Treatments of Chronic Asthma (COPD) are routinely done. RNTCP Government Undertaking Programme for Tuberculosis conducting every day. Mantoux test and AFB Smear for Sputum done every day as part of RNTCP Programme. The diagnostic facilities of routine Pulmonary Function Test, 6MWT Walk Test, ABG, Allergy testing and Immunotherapy and Diagnostic Bronchoscopy (BAL, TBLB, TBNA). Pleural Procedures (Aspiration, ICD) Pleural Biopsy FNAC and Thoracoscopy Procedures are performed in the department. Special Clinic in Smoking cessation conducted weekly. The department also helps in critical care of ICU patients.

PROGRAMME

- MD Respiratory Medicine

Radiation Therapy

Radiation Therapy specializes in the medical use of ionizing radiation for the treatment of cancer and other medical conditions. The Department of Radiation Therapy at Amrita is of international standard and has the most technologically advanced clinical radiation therapy programmes in the country. The department is equipped with the **Cyberknife M6 Series System** and the **TomoTherapy H Series**, as well as linear accelerators with three photon energies with multi-leaf collimation and a full set of electron beams. The department also has a CT simulator, a conventional simulator and a computerized treatment planning system with CT/MRI/PET fusion capability. The services offered by the department are Stereotactic Radiosurgery, Intensity Modulated Radiotherapy (IMRT), 3-D Conformal Radiotherapy (3-DCRT), Total Skin Electron Therapy



(TSET), Total Body Irradiation (TBI), Conventional Radiotherapy, High Dose Rate Brachytherapy, Strontium Ocular Brachytherapy etc. for the treatment of cancers and many non-malignant conditions. The accuracy of radiation treatment delivery is ensured by the electronic portal imaging for real time verification of the treated area and a range of sophisticated quality assurance equipment.

PROGRAMMES

■ MD Radiation Oncology

Radiodiagnosis

The Medical Imaging Centre is one of the finest international centres of its kind. New high performance equipment together with a hospital-wide, all digital imaging, archival and retrieval system establishes AIMS as an important referral site.

Procedures using imaging equipment for guidance (Interventional Radiology) reduce hospital stays and costs, reduce the need for major surgery, and can save lives. Hundreds of patients have benefited from interventional procedures like guided biopsy, abscess drainage, nephrostomy, angioplasty, and embolizations.

PROGRAMMES

■ MD Radiodiagnosis

■ BSc Medical Radiologic Technology (BSc MRT)

BSc in Medical Radiologic Technology is a four-year degree programme. It provides knowledge and skill development in understanding and applying the principles of science and medicine as they relate to medical radiological and other imaging, as well as radiotherapy.

The student will become technically competent in the techniques of diagnostic imaging and the therapeutic use of radiation. The student will be well versed in the handling of highly sophisticated medical imaging and therapeutic equipment related to these specialities. The course content includes:

- Anatomy, pathology and physiology
- Medical imaging and radiation oncology equipment

- Professionalism and patient care
- Radiobiology and radiation protection
- General radiology and radiotherapy techniques
- Specialized radiologic and imaging procedures in MRI, CT, DSA, Mammography, Cardiology, Orthopaedics, etc.
- Specialized radiotherapy procedures like 3D CRT, IMRT, SRT and SRS.

Gynaec Oncology

The Oncology Department includes surgeons trained in oncology surgery from all surgical subspecialities. The department offers a three-year MCh in oncology and gynaec-oncology for Post Graduate students of surgery and gynaecology interested in pursuing a career in Oncology.

PROGRAMME

■ MCh Gynaecological Oncology

Urology

The Centre for Urology and Renal Transplantation offers comprehensive facilities for the diagnosis and treatment of genitourinary problems in adults and children. A highly qualified and experienced team of dedicated urologists and resident surgeons who are available 24 hours a day man it. The latest "state of the art" technology and equipments are available. The faculty subspecializes in the fields of paediatric urology, urological oncology, laparoscopic urology, endourology, andrology, female urology, neuro – urology and reconstructive urology. Along with the support of the nephrology services more than 240 renal transplantation operations have been successfully performed. The department has established itself as one of the best of it's kind not only in the country but comparable to the best in the world.

PROGRAMME

■ MCh Urology

Amrita Clinical Skills Simulation Centre

Innovative, Noninvasive Medical/Surgical Technology and Education

Physicians and surgeons at Amrita Institute of Medical Sciences are nationally and internationally recognized for their expertise in developing leading-edge medical and surgical techniques as well as educating the medical community about them. The new era of medicine revolutionizes all medical and surgical procedures through our ability to perform and develop a full range of sophisticated, minimally invasive techniques. These state-of-the-art techniques result in less post-surgery pain, fewer complications, less scarring, faster recovery time and early discharging of the patients from the hospital. These procedures are used across all clinical disciplines. By the introduction of the unique Simulation Centre in Amrita, we are one step ahead in developing new teaching methodology in the field of medical education.

Simulation-Based Medical Education (SBME)

During the past decades, Simulation-Based Medical Education (SBME) has been a rapidly growing field, as evidenced by the increased development of simulation centres worldwide. SBME is becoming a powerful force in addressing the need to increase patient safety through quality care training. Changes in healthcare delivery and academic environments that limit patient availability for teaching purposes have spurred widespread reports on medical errors since the spread of modern medical practices worldwide. Both the public and health professionals are alarmed by these reports. The Medical Council of India has suggested clinical skill labs should be mandatory for all Medical Colleges in India. These are mainly dedicated to enhancing hands-on Medical education, performance assessment and evaluation, as well as improving clinical and communication skills.

What is Simulation and Simulaids (Mannequins)?

Simulation is a technique to replace or amplify real experiences with guided experiences on mannequins. A mannequin is an artificial human body made of silicon rubber and PVC. It mimics accurate anatomical structures, with electronic devices to auscultate normal/abnormal heart, lung and abdominal sounds and give realistic tactile impressions for abdominal palpation of normal/abnormal

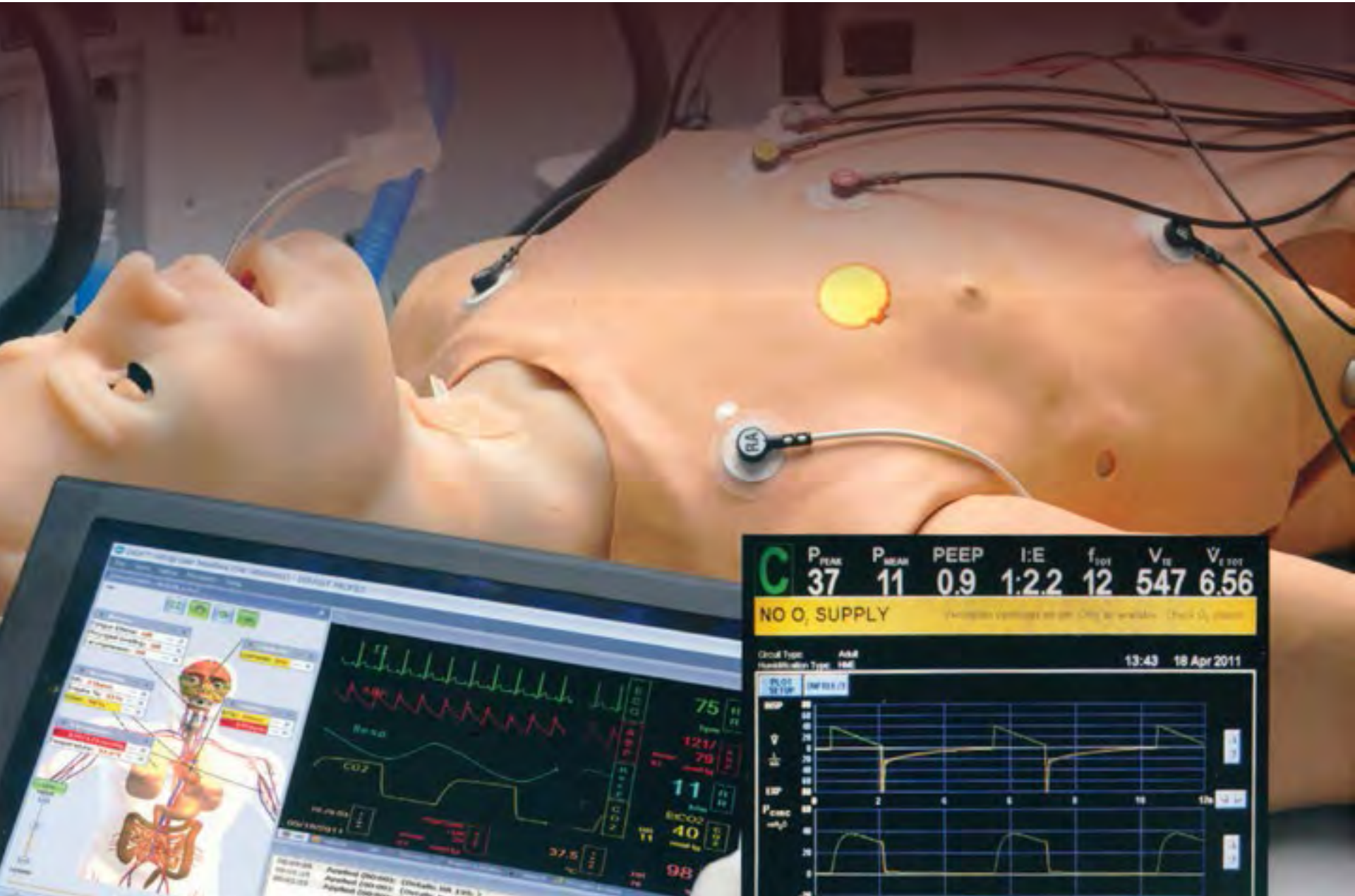
liver, spleen, intestines and all pelvic organs. Obstetric and gynaecologic mannequins mimic antenatal palpation of foetus with foetal heart sounds. CPR mannequins are optimal tools for basic and advanced life support skills training. Various clinical conditions and scenarios can be programmed on these simulaids, and they will prove instrumental for evaluating the performance of skills, especially for Emergency Medicine PG students. Simulaids are for basic, advanced surgical skills and various non-invasive procedures. We can use these to conduct UG examinations with programmed clinical conditions instead of using live patients. Students can engage in repetitive practice with increasing levels of difficulty.

We have the following Simulation Stations with mannequins for:

1. General Medicine

- Complete Cardiovascular auscultation- normal and abnormal heart sounds, provision for pericardiocentesis.
- Respiratory system auscultation, provision for demo of pneumothorax, ICD, aspiration of pleural effusion, etc





2. Surgery for all basic surgical skills:

- Abdomen for normal palpation of the viscera
- Incision and suture training, IV, IM injections, trocar-cannula for puncturing, vascular catching and ligation
- Laparoscopic examination and surgery
- Male and female catheterization
- Breast examination

3. Obstetrics and Gynaecology

- Complete antenatal palpation of abdomen with different presentations and positions of the foetus
- Automated delivery mannequin with provision to conduct normal delivery, and breach as well, with abnormal presentations and obstructed labour, with provision for episiotomy. Foetal heart can be monitored, provision for maternal CPR available
- All Gynaecological conditions of the uterus, tubes and ovaries assessed by PV and speculum examination

4. Paediatrics

- Baby mannequins for Paediatric IM, IV injections and neonatal baby care

5. Orthopedic procedures

- Intra articular injections for shoulder and knee.
- Trauma mannequin for handling and different types of bandage training.

6. Emergency Medicine/Anaesthesia

- ICU set up with Adult CPR mannequins with monitors, provision for creating various cardiac conditions. For BCLS & ACLS training (with ventricular defibrillation facilities).

- Adult CPR - Recording mannequins for conducting examination and evaluation, for trainees.
- Mannequins for intubation, tracheostomy /cricothyrotomy trainings.
- Adult SMART- STAT- Interactive mannequin for creating different life-threatening scenarios, responding to the various treatment modalities for ACLS training; can be used as patient programmed for different critical conditions for conducting PG exam and evaluation.
- INFANT- PEDI- STAT- Mannequins for endotracheal intubation, CPR- different critical conditions can be simulated and can be recovered to normal conditions.
- Mannequin for spinal injection & LP- procedures.
- Mannequin for Central venous Catheterization.

Didactic Sessions and Training Offered

- BCLS, ACLS- training in Adult and Newborn Simulaids.
- Basic Surgical skill training for UG/PG students.
- Amrita basic clinical skills training certificate course.
- Laparoscopy training.
- Orthopaedic procedures: Intra articular injections and trauma care training.
- Video/Teleconferences.
- Video library of minimally invasive, Medical/Surgical-laparoscopic/ endoscopic/ procedures
- Real time transmission of live procedures from centres around the world.

SPECIAL FEATURES

Amrita Hospital Information System (AHIS) – In-house developed
Amrita University Management System (AUMS) – In-house developed – Certified by CCHIT (Certification Commission for Health Information Technology)
Amrita School of Medicine in Avicenna Directory of Medicine(WHO)
Telemedicine connected with 51 national and 6 international centres & pan african countries, skill lab, medical illustration unit
WHO Recognized Poison Control Centre
Cancer Registry – only private medical college in Kerala

NEW PROGRAMMES IN EMERGING AREAS

DM Paediatric Cardiology (1st and only institution in India)
MCh in Head & Neck Surgery (1st institution in India)
MD Nuclear Medicine (2nd in India – 1st in Pvt. Sector)
DM Pulmonary Medicine (2nd in India)
MD Geriatrics (3rd in India)
DM Cardiac Anaesthesia (5th in India)
MD Emergency Medicine (15th in India - total 19)
UG & PG – Allied Health Programmes

CENTRAL LIBRARY

Year	2016	2017	2018
Total Number of Books	14675	14892	15690
Textbooks	11679	11948	13685
Reference Books	8013	8120	9568
Journals (National)	102	106	106
Journals (International)	168	168	170
Electronic Databases	9	10	10
CD/DVDs	1363	1378	1385
Back Volumes of Journals	4250	6638	6720
Thesis - 1005			
E-books - 1012; E-journals - 2223			
OPAC (Online Public Access Catalogues) facility available			
Facilities available – Internet Browsing, Photocopying, Computer print outs, Scanning, WiFi available			
Computers - 31			
Average number of walk-ins per day - 300			

INFRASTRUCTURE		
ITEM	STATUTORY MINIMUM REQUIREMENTS	IN POSITION
Lecture Halls	3	5
Hostels	80%	100%
Auditorium	1	2
Labs	6	11
Faculty (including UG & PG Programmes)	208	322
MEDICAL ALUMNI AT INTERNATIONAL SCHOOLS (2017-18)		
George Town University Hospital, Washington DC USA		
University of Maryland, Baltimore, USA		
University of Wisconsin, Madison, USA		
Melbourne University, Australia		
Boston University, USA		
Nevil Hall Hospital, UK		
University of California, San Francisco, USA		
Houston University, Texas, USA		
UK Government Hospital, UK		
Howard University, Washington, USA		
University of Akron, OH, USA		
American Medical Board, Arizona, USA		
University of Luton, UK		
Sandwell College, West Midlands, UK		
St. Vincent Medical Center, Bridge Port, USA		
Mayo Clinic, USA		
Jan Jung Medical University, China		
North Carolina University, USA		
University of Texas, USA		
Ripas Hospital, Brunei		
Shanti Hospital, London, UK		

EXPERIMENTAL ANIMAL FACILITY
Area – Approx 75,000 sq ft.
Sheep Farm : 1.8 acres
Animals : rabbit, white rat and mice
Facilities : Lab animal MRI unit
Fully equipped animal histopathology lab
Double door autoclave
Lab animal anaesthesia machine
Non-invasive ECG tunnel for rodents
Lab animal ventilator
Homeothermic blanket
Lab animal handling equipments
Operating microscope
Biosafety cabinet

RESEARCH PROJECTS FUNDED BY..
ICMR Scholarship for UG students
Quit Tobacco International Grant
UNICEF – Infant & Young Child Nutrition
UNICEF – Dissemination Workshop
North Carolina Peers for Progress
ICMR – International colloquium on neglected tropical diseases
DST

COLLABORATIONS
Graduate School of Medicine, MIE University, Japan – Student exchange programme.
Anglia Ruskin University, United Kingdom – Faculty and student exchange programme
Rosewell Park Cancer Institute, New York, USA – Head and Neck faculty exchange programme.
Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, USA, Richard G. Azizkhan MD and Dept of Pediatric Surgery, AIMS.
Department of Pediatric Surgery, University of Toledo, United States of America and Dept of Pediatric Surgery, AIMS.
Lucille Packard Children’s Hospital, Stanford University, Intensive Care, Research on postoperative outcomes
Children’s Hospital, Boston, Harvard Medical School, Dr. Jane Newburger Fellowship exchange
Harvard School of Public Health, Dr. Richard Cash, Community Based Research, AIMS is an overseas location for MPH students
Children’s Heartlink, Mr. John Cushing, Funding of training of nurses, infection control, short-term training and education
Addenbrooke’s Hospital, Cambridge University Hospitals, Hills Road, Cambridge – Faculty exchange programme in transplant Surgery
Mc Master University in Canada - Diabetes and Heart disease.
Birmingham University U.K - Overseas posting.
College of Medicine, University of Ilorin Teaching Hospital, Ilorin, Nigeria and Dept of Pediatric Surgery, AIMS.
Heilbronn University, Hochschule Heilbronn University of Applied Sciences, Heilbronn, Germany.
Kings College London, Institute of Psychiatry, Dr.Sophia on Psychiatry care imaging studies, Department of Psychiatry, AIMS

BEST PRACTICES
Quality Assurance & Sustainance : Accreditations
Cancer Registry from 2004 onwards
Creation & Adoption of latest information technology
Constitution of Committees for welfare of faculty, students & staff
Regular & Emergency Medical Relief activities
Parent meetings and feed back collection
Online students services
Gurukula System & Senior Teachers as “Acharyas”
Yoga & Meditation Training, Daily evening Prayer
Medical Insurance for all faculty & staff
Unique teaching approaches like skill lab, mannequins and e-learning resources

MBBS (Bachelor of Medicine and Bachelor of Surgery)

Eligibility for MBBS

As per NEET UG-2020 norms

Admission Procedure

Selection is based on the rank obtained in the National Eligibility cum Entrance Test (NEET) and counselling allotment by DGHS.

Degree Details

Degree	Duration (in years)	Seats
MBBS	4½ plus 1 year internship	100

MD (Doctor of Medicine) / MS (Master of Surgery)

Eligibility

As per NEET PG-2020 norms

Admission Procedure

Selection is based on the rank obtained in the National Eligibility cum Entrance Test (NEET) and counselling allotment by DGHS.

Degree Details

Degree	Duration (in years)
MD/MS	3 years

DEGREES

DM (Doctor of Medicine) / MCh (Master of Chirurgiae)

Eligibility

A candidate, who holds MD / MS degree from a recognized Medical College included in the Schedules to the Indian Medical Council Act, 1956 and has obtained full registration for MD / MS either from the Medical Council of India or any of the state Medical Councils.

Admission Procedure

Selection is based on the rank obtained in the National Eligibility cum Entrance Test (NEET) and counselling allotment by DGHS.

Degree Details

Degree	Duration (in years)
DM/MCh	3 years

DOCTORAL PROGRAMMES

Doctoral programmes have been initiated in different specialities both in pre-clinical, para-clinical and clinical departments as given below:

- Biochemistry
- Clinical Psychology
- Community Dentistry
- Cytogenetics
- Endocrinology
- Head and Neck
- Medical Administration
- Molecular Biology
- Neuro and Behavioral Sciences
- Oncology
- Pharmaceutical Sciences
- Physiology

It is envisaged that the PhD course will be for 3-5 years and selection of candidates will be done after rigorous interview and examination. Funding for candidates should be obtained through National fellowships which are given through the DBT, DST, ICMR. Students are encouraged to apply for this.

Progress in medical science has come through painstaking and systematic research. Major breakthroughs are achieved by years of focused research efforts primarily from academic medical institutions with vision and commitment in bio-medical research and development.

Amrita Centre for Allied Health Sciences



Amrita Centre for Allied Health Sciences has a distinguished history of teaching Allied Health professionals the latest, most advanced medical and surgical practices. Amrita, in fact, has been training Allied Health professionals from throughout the country for more than 12 years.

The healthcare system in the country remains unable to meet the health needs of the population because of many related factors most prominent one being that of acute shortage of skilled manpower. Availability of human resources at all levels of the healthcare system is extremely essential in moving towards the larger goal of Universal Health Coverage for India. Allied health professionals include individuals involved with the delivery of health or related services, with expertise in therapeutic, diagnostic, curative, preventive and/or rehabilitative interventions. They work in interdisciplinary health teams including physicians, nurses and public health officials to promote, protect, treat and/ or manage a person(s) physical, mental, social, emotional, environmental health and holistic well-being.

MSc & BSc Medical Laboratory Technology

Medical Laboratory Technology is an Allied Health specialty concerned with the diagnosis, treatment and prevention of diseases through the use of clinical laboratory tests. Though the Medical Lab technologists spend less time with patients than doctors and nurses, medical laboratory professionals are just as dedicated to patient's health. Medical laboratory professionals have unlimited choices of practice settings. Hospitals, clinics, nursing homes, public health facilities, and commercial laboratories all have positions open right now for qualified laboratory professionals.

MSc & BSc Neuroelectrophysiology

Neurotechnology is a fast developing field in medical science. It operates with the development of neurosciences, cellular engineering and signal processing. This course enables the neurotechnologist to perform and interpret electrophysiology procedures. The students will acquire skills to assess the patients and plan various electrodiagnostic procedures and implement them. The students will also get an opportunity for hands on training in Sleep studies, Autonomic function tests, Pre-surgical evaluation of epilepsy, EEG including Neonatal and long term monitoring etc. As neuro-technology is an integral

part of neurology, the neuro-technologists are in great demand in hospitals in India and abroad.

MSc Biostatistics

The discipline of Biostatistics has contributed substantially to the development of health, medical and biological sciences, and has emerged as an important tool for research. By applying various statistical methodologies a variety of easily applicable diagnosis, treatment and prognosis methods have been developed with scientific validity and many diseases and health conditions have been understood and dealt with appropriately. Statistical methodologies form the strength of any research study so as to make valid judgments and conclusions. Statistical design and analysis methods are very widely used in Clinical Trials, Pharmacology, Genetics, Biotechnology, Basic Sciences, Epidemiological studies, Demography, Quality Control of Medical and Biological equipment, Medical Diagnosis and Prognosis and Health Economics.

MPhil in Clinical Psychology

Clinical psychology as one of the core disciplines in the area of mental health/illness has grown significantly in the last two decades. Mental health problems are continuously on the rise owing to change in life style, habits and mounting stress in personal/occupational/social domains across various sections of the society. Clinical Psychologists apply knowledge and methods from all substantive fields of bio psychosocial sciences for promotion and maintenance of mental health of individuals.

The aim of this course is to prepare the trainee to function as a qualified professional Clinical Psychologist in the areas of mental and physical health by offering Diagnostic, Therapeutic, Rehabilitative, Administrative services, and to work towards promoting the well-being and quality-of-life of individuals.

MSc Clinical Nutrition & Food Science

Dieticians are the professional members of the healthcare team responsible



for the nutritional care of individuals and groups. They function to assure quality nutritional care of individuals and groups at all stages of life span and in all conditions of health and disease. This program in clinical nutrition build on previously acquired knowledge of food, nutrition and biological sciences. Course instructions focus on theory and techniques of nutritional education, management and care and scientific principles upon which to plan nutritional therapy. A very prospective program is credited in AIMS that would enable the students to strive for professional competence, productivity and services to society.

MSc & BSc Respiratory Therapy

Respiratory Therapy is a relatively new branch of Allied Health Sciences and a profession devoted to the scientific application of technology in order to assist in the diagnosis, treatment, management and care of patients with cardiopulmonary and associated disorders. Respiratory Therapists are important members of modern healthcare teams. The curriculum is developed to educate students to transform them to highly skilled Respiratory therapist. In addition they are also given orientation in Research and education.

BSc Anaesthesia Technology

Anaesthesia technologist is an Allied Healthcare professional who assists in administration and monitoring of anaesthesia and has an extensive knowledge of anaesthesia techniques, instruments, supplies, and technology. Anaesthesia technologist are mainly employed by anaesthesia departments or operating theatre suites, but can be found in other areas of clinical practice including emergency departments, intensive care units (ICU) and day surgery clinics. Anaesthesia technologist work as a member of a multi-disciplinary team that includes doctors, nurses and support staffs. Amrita Institute of Medical Sciences has 28 operation theatres and 220 intensive care beds, with state-of-the-art equipment giving students exposure to the most modern techniques in critical care.

BSc Cardiac Perfusion Technology

Cardiovascular perfusion is the science of providing extracorporeal circulation

in order to artificially support and temporarily replace a patient's respiratory and circulatory systems. Clinical Perfusionists are expert members of the cardiac surgical team, and provide life saving support of patients requiring extra corporeal circulation, including but not limited to major cardiothoracic, vascular and transplant surgeries, as well as support of the critically-ill patient. Cardiovascular Perfusionists are important members of the open-heart surgical team whose primary role is to support cardiopulmonary bypass using a heart-lung machine and other ancillary equipment. The primary aim of B.Sc Cardiac Perfusion Technology is to academically and clinically prepare the cardiovascular perfusion student for professional practice.

MSc & BSc Cardiovascular Technology

Current management of various cardiac disorders includes complex diagnostic and therapeutic procedures, which involve use of various equipments, computer hardware, tools, machines, and pharmacological agents. Handling of these equipments and tools as well as their regular maintenance requires advanced and focused knowledge of the scientific principles on which the tests and equipments function, as well as to have hands-on skill in using these equipments correctly and safely. The graduate program in Cardiovascular Technology consists of three years of clinical faculty supervised theoretic learning and practical hands-on training. This enables the student to apply specialized occupational theory, skills and concepts.

MSc & BSc Diabetes Sciences

As the number of people with diabetes increases, so does the need for diabetes-aware skilled healthcare providers. This course is intended to train Diabetes Educators who would assist doctors in their clinic in managing diabetic patients. Diabetic educators will be able to counsel patients about diet, initiate insulin therapy, provide psychological support etc; on an individual basis and also conduct group education sessions on Diabetes to patients and their relatives. They will also learn basics of Medical nutrition therapy, basic podiatric care and essential statistics which would enable them to give dietary advice, podiatric care and conduct clinical audits and data entry. This course will enable the

successful candidate to be posted as an assistant to a Diabetologist in a clinic or hospital, specializing in Diabetes to assist the physician in clinical tasks and also participate in clinical management.

MSc & BSc Dialysis Therapy

Three year graduate program with one year internship in Dialysis provides students with the opportunity to study the principles of dialysis, basic medical science of the kidney, fluid and electrolyte balance, hematologic aspects, infectious diseases, dialysis systems and equipment, vascular access to circulation, blood chemistries, complications of renal failure, psychosocial aspects and an overview of peritoneal dialysis and renal transplantation. The program seeks to prepare students to work under the supervision of highly skilled medical professionals. A dialysis technologist can set up, evaluate, operate, and troubleshoot dialysis machines, and this knowledge can be used to find work in quality control or other areas in dialysis machine manufacturing.

BSc Echocardiography Technology

Current management of various cardiac disorders includes complex diagnostic and therapeutic procedures, which involve use of various equipment, computer hard ware, tools, machines, and pharmacological agents. An echocardiography technologist uses high frequency sound waves to create pictures of the human heart and identify possible medical problems. He/She is also known as a cardiovascular sono-grapher, uses ultrasound technology to create images of the human heart and measure its performance. Echo-cardiology technologist work with cardiologists to diagnose and treat problems associated with the heart and peripheral blood vessels.

MSc & BSc Emergency Medical Technology

The concept of emergency medicine is relatively new to the Indian medical world while it has become the back bone of the healthcare system in most developed countries. Emergency medicine is a field of practice based on the knowledge and skills required for the prevention, diagnosis and management of the acute

and urgent aspects of illness and injury affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioural disorders. It is a speciality in which time is critical. As the number of trauma and natural disasters are increasing day by day, Emergency Medicine has become the need of the hour.

BSc Medical Radiologic Technology

This branch of Allied Health Science deals with the use of sophisticated technology in medical imaging and cancer treatment. It has various sub specialties such as Radiology, Radiotherapy & Nuclear medicine. In Amrita Institute of Medical Sciences, Departments of Radiology & Radiation Oncology are jointly conducting B.Sc MRT program since 2005. Very good job opportunities are being created in the field of Radiologic technology. A large number of hospitals have installed advanced imaging & therapeutic equipments and there will be an increased need of Radiologic technologists in the coming years in India and abroad. After the completion of the course candidates can work as: Radiological technologist, Radiotherapy technologist and Nuclear medicine technologist.

MSc & BSc Physician Assistant

Physician Assistants are formally trained to provide diagnostic, therapeutic and preventive health care services in virtually all medical specialties, as delegated by a physician. Working as members of a health care team, they take medical histories, initial examination of the patients, order for laboratory tests and x-rays and assist the doctors for diagnosis and treatment. They also handle minor injuries by suturing, splinting and casting. This is a primary course for the post of Physician Assistant. The scope of this course is tremendous in our country. Apart from working as PA, they get placements in medical software institutions, pharmaceutical industry and organizations developing and marketing sophisticated medical devices, medical tourism, and medical insurance. Besides, they will be appointed as coordinators for various clinical trials.

BSc Optometry

Optometry is a health care profession which deals with the examination,



diagnosis, treatment and management of diseases and disorders of the visual system. It is a vision care science. One can also define it as the science of eye equipment (including lenses and spectacles) which is imbued with the idea of improving the vision of the human eye and remove all kinds of obstacles of sight which an individual may experience. The training will enable a student to become a competent person in providing service as an Optician, Optometrist, Refractionist and Ophthalmic Assistant to the community in urban, semi-urban and rural settings in private, semi-Governmental and Governmental sectors.

BSc Operation Theatre Technology

Operation Theatre Technology is a detailed technical occupation in the field of health science. These medical professionals are an important part of the operation unit team who work alongside with the surgeon, anesthesiologist and nurse in order to provide quality patient care throughout the surgery.

These technicians make sure that every single process in the operation theatre is as secure and flourishing as possible. Their prime duty is to take care of all the work and management of the operation theatre which comprise looking after all the surgical instruments, their sterilisation, preparation of dressing table, operation theatre table, instrument table as well as anesthesia table. They also look after the drugs necessary for surgery, anesthetic gases, drapes and all the linen and their sterilisation. They bring together both sterile and non-sterile tools and at the same time regulate them to make sure that all are functioning appropriately.

BSc Intensive Care Technology

BSc Intensive Care Technology is a well in demand course. Services of an intensive care technologist are highly desired in every hospital and healthcare unit. Here in this course you will be learning all about intensive care given to the ICU patients. You learn monitoring the equipment, recording the data and providing these data to the physicians. You will be also learning providing first-aid to patients in the absence of suitable medical aid.

Bachelor in Audiology and Speech Language Pathology

Audiology is a branch of science that deals with hearing and hearing related

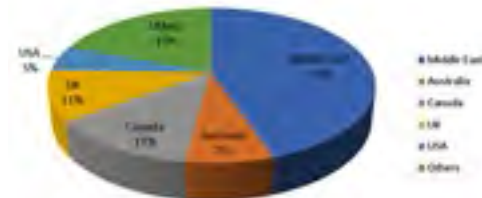
disorders. The Speech and Language Pathology course deals with the normal and abnormal aspects of voice, speech and language. Students of Speech Language Pathology are trained in differential diagnosis and management of voice, speech and language disorders. Job opportunities are available for audiologists and speech language pathologists, both in India and overseas.

Allied Health Science students, Ms. Sruthi and Ms. Megna Paulo won zonal prizes in All India Essay Writing Event 2014 organized by Shri Ram Chandra Mission in collaboration with the United Nations Information Centre for India and Bhutan.

Factors That Differentiate Our Allied Health Science

- Emphasis on practical and clinical skill.
- Three Sessional examinations.
- Classes in Computer knowledge, communication skill, Quality and Accreditation.
- Clinical Skill simulation centre.
- BLS training.
- Participation in medical camps, workshops, National and International Seminars and conferences.

Distribution of Aluminis Working Abroad



Innovations and Best Practices

- Cultural integration through value based education.
- Regular parent-teacher meetings and feedback collection.
- Yoga & Meditation training, Daily evening prayer.
- Arts Festival and Sports Meet.

Undergraduate Programmes (Allied Health Sciences)

Course	Duration of the course	Eligibility Conditions
BSc Anaesthesia Technology (AIT)	3 years + 1 year internship	Pass in +2 with 60% aggregate marks in Physics, Chemistry, Biology and English
BSc Cardiac Perfusion Technology (CPT)		
BSc Cardio Vascular Technology (CVT)		
BSc Diabetes Sciences (DBS)		
BSc Dialysis Therapy (DIT)		
BSc Echocardiography Technology (ECT)		
BSc Emergency Medical Technology (EMT)		
BSc Neuro Electro Physiology (NEP)		
BSc Optometry (OPT)		
BSc Physician Assistant (PAT)		
BSc Respiratory Therapy (RPT)		
BSc Operation Theatre Technology (OTT)		
BSc Intensive Care Technology (ICT)		
Bachelor of Audiology & Speech Language Pathology (BASLP)		
BSc Medical Laboratory Technology (MLT)	4 years	First class in +2 with 60% aggregate marks in Physics, Chemistry, Biology, English and 60% marks separately in Mathematics
BSc Medical Radiologic Technology (MRT)	4 years	

Admission procedure: Selection is based on the rank obtained in the All India entrance examination conducted by Amrita Vishwa Vidyapeetham

MSc Courses (Allied Health Sciences)

Course	No. of seats	Duration of the course	Eligibility Conditions
MHA - Master of Hospital Administration	35	2 years	Any graduation from recognized university with minimum 60 % marks. Candidates with qualification in hospital-oriented subjects will be given preference.
MPhil in Clinical Psychology*	6	2 years	M.A./MSc degree in Psychology from a university recognized by the UGC with a minimum of 55% marks in aggregate. SC/ST/ OBC category, candidates should have secured a minimum of 50% of marks in the aggregate Candidates with qualification in Clinical Psychology related subjects and internship experiences in the area of mental health will have an added advantage for admissions (as per RCI norms).
MPH - Master of Public Health	25	2 years	MBBS,BDS, MSc. Community Nursing, Masters in Clinical Pharmacy, Social Science, and Physiotherapy Bachelor Degree in AYUSH stream. Add!: Experience in health field related to public health is desirable and is an added advantage.

*Admission procedure: Selection is based on the rank obtained in the All India entrance examination and personal interview conducted by Amrita Vishwa Vidyapeetham

Postgraduate Programmes (Allied Health Sciences)

Course	No. of seats	Duration of the course	Eligibility Conditions
MSc Medical Laboratory Technology (MLT) I. Biochemistry II. Pathology III. Microbiology	12	2 Years	Pass in BSc MLT (4 Years regular course only)
MSc Deglutology & Swallowing Disorders	6	2 Years	Bachelor of Audiology and Speech Language Pathology (BASLP)
MSc Biostatistics	5	2 Years	Graduates in Statistics / Mathematics with paper in Statistics
MSc Respiratory Therapy	2	2 Years	BSc Respiratory Therapy [3 years + one year Internship (or) 3 years + 6 months internship + one year work experience]
MSc Clinical Nutrition & Food Science	20	2 Years	B.Sc in: a) Food and Nutrition b) Human Nutrition c) Applied Nutrition d) Nutrition and Dietetics e) Home Science f) Clinical Nutrition and Dietetics g) Food Science and Quality control h) Food Service Management and Dietetics i) BSc in Life Sciences j) BSc Family & Community Science k) PG Diploma in Nutrition and Dietetics l) PG Diploma in Clinical Nutrition
MSc Neuro Electro Physiology	4	2 Years	BSc Neuro Electro Physiology [3 years + one year Internship (or) 3 years + 6 months internship + one year work experience]
MSc Diabetes Sciences	4	2 Years	Pass in BSc Diabetes Sciences [3 years + one year Internship (or) 3 years + 6 months internship + one year work experience]
MSc Cardiovascular Technology	4	2 Years	Pass in BSc Cardiovascular Technology [3 years + one year Internship (or) 3 years + 6 months internship + one year work experience]
MSc Dialysis Therapy	4	2 Years	Pass in BSc Dialysis Therapy [3 years + one year Internship (or) 3 years + 6 months internship + one year work experience]
MSc Physician Assistant (Medical Oncology)	4	2 Years	Pass in BSc Physician Assistant (General Medicine) [3 years + one year Internship (or) 3 years + 6 months internship + one year work experience]
MSc Physician Assistant (Cardiovascular & Thoracic Sciences)	4	2 Years	Pass in BSc Physician Assistant (CVT) [3 years + one year Internship (or) 3 years + 6 months internship + one year work experience]
MSc Emergency Medical Technology	4	2 Years	Pass in BSc Emergency Medical Technology [3 years + one year Internship (or) 3 years + 6 months internship + one year work experience]

Master of Hospital Administration



Hospital Administrators not only have to be robustly trained in the art and science of health and hospital care delivery system, but they also have to possess the interpersonal skills and business savvy required to manage hospitals and healthcare organizations.

MASTER OF HOSPITAL ADMINISTRATION PROGRAM

As healthcare management becomes increasingly challenging, there is a greater need for not only skillful doctors but also efficient Hospital Administrators. With increasing emphasis on quality of health care and patient satisfaction, there is a tremendous need for persons with a professional qualification in Hospital Administration.

The healthcare campus of Amrita Vishwa Vidyapeetham at Kochi offers this much sought after postgraduate professional course in Hospital Administration. The programme emphasises on developing knowledge, skill and attitude pertaining to budding Hospital Managers. It also helps the candidates in developing expertise in planning and managing different types of hospitals and we equip them with problem solving skills as well.

With medicine becoming more and more technology dependent, and equipment-intensive, the need for a system driven approach to practice hospital administration has now become very crucial. Rising healthcare cost, procurement, optimum utilisation, maintenance and providing financially sustainable and affordable healthcare to the people will be the challenge that any hospital administrator will have to face.

An administrator's prime role is to ensure that all these diverse systems work together seamlessly to provide quality healthcare to the patients. Delivery of efficient services without intimidating the patient is the hallmark of a good hospital administrator and we prepare them to meet this need and be well-equipped to meet future challenges.

As Hospital Administrator, the emphasis is on quality, efficiency and cost containment that requires 100% commitment to ensure quality in-patient care, lowering the length of stay, decreasing resource utilisation and working with the clinical, paramedical, and support staff to co-ordinate all aspects of in-house care.

The success of a hospital manager lies in several things : from multidisciplinary conceptual skills required to develop, market and diversify services to

protecting medical profession and clients from unnecessary litigation and ensuring a rich team of professionals for quality healthcare.

Our MHA programme enables individuals to take on leadership roles by equipping them with training in: Public Health, Basic Medical Sciences, Hospital Planning & Organising, Human Resource Management, Hospital Operations Management, Quality Assurance, Material Management, Project Management, Financial Management, Marketing, Hospital Information System Hospital Policies, Practices, Acts & Committees, Research, etc.

Thus Amrita prepares a candidate to assume the responsibilities of Manager/ Asst. Hospital Administrator/Administrator in a government, semi government, corporate or charitable hospital and to be successful healthcare professionals.

AMRITA'S SIX CORE COMPETENCIES (ASCC) IN HOSPITAL ADMINISTRATION INCLUDES:

- Knowledge of the Hospital & Healthcare Management
- Leadership
- Professionalism
- Business Skills and Knowledge
- Communication and Relationship Management
- Value Based Education

PROGRAMME CONTENTS

- Principles of Healthcare Management
- Human Resources Management
- Managerial Communication
- Hospital Operations and Services
- Organisational Behaviour
- Culture Education and Ethical Practices
- Managerial and Healthcare Economics



- Medical Terminologies
- Medical Records Documentation
- Group Dynamics and Team Building
- IT for Management
- Hospital Supportive Services
- Marketing of Hospital Services
- Materials Management and Inventory Control
- Finance Management
- Costing and Management Accounting
- Operations Research and Biostatistics

- Business Laws and Medico – Legal system
- Customer Relationship Management
- Public Relations
- Nursing Administration
- Emergency Preparedness
- Medical Informatics and Telemedicine
- Community Medicine and Outreach
- Quality Assurance
- Medico-legal Systems
- Strategic Management and Facilities Planning

- Soft Skills
- Medical Insurance
- Consumer Behaviour
- Safety Engineering in Hospital
- Employee Training and Development
- Research Methodology
- Biomedical Waste Management
- Quantitative Techniques
- Case Studies Presentations
- Organisational / Hospital Visits
- Internship Projects
- Main Full Time Project
- Dissertation and Viva voce (Final Semester)

ON-SITE MODULE AND THE SYSTEMATIC APPROACH OF TEACHING AND ASSESSMENT

A blend of theoretical sessions, class room discussions, individual and group tasks led by full time faculty and experts from the industry provides our students with knowledge and skill sets. Aptly supplementing this, during the four semesters of the MHA program the practical training and orientation at Amrita Institute of Medical Sciences and Research Centre prepares the student for a career that is not only exciting but vital to the lives of thousands of people.

HANDS ON TRAINING IN A UNIVERSITY TEACHING HOSPITAL:

Students are assigned to various departments where they learn each aspect of departmental functioning and then consolidate their efforts towards problem solving exercises as a component of knowledge implementation.

Key Areas include:

Out Patient Services, Analysis of case mix and disease trends in the departments; In patient operations; Role of medical and paramedical staff; Coordination of medical and non-medical services; Equipments and instruments utilization and review; Deployment of IT services; Performance appraisal and assessment, Performance standards evaluation, Prevention and health protection; Promotion of community health programmes; Patient privacy, confidentiality and security; Service cost and analysis, Inventory scheduling and activities, Community healthcare and checkup camps, department based promotion of medical tourism.

Students will be asked to rigorously read standards text books and journal articles related to a department to fully understand a department and its ancillary functions and share the content by making oral and power point presentations regularly on the problems that they observe and make recommendations.

GRADUALLY THE STUDENTS WILL GAIN KNOWLEDGE IN THE HIGHER REALMS LIKE:

- Project Implementations
- Organising department(s)
- Operational Efficiency
- Workflow Analysis
- Performance Analysis
- Financial Feasibility
- Hospital Logistics
- Utilization reviews
- Workload Analysis
- HIS & EMR implementation
- Quality Assurance
- Disaster Management



At the end of the training process students will consolidate and also improvise skills exhibiting in the areas of Professionalism, Leadership and Decision making. In the final phase of their MHA programme they will focus their attention on Specific Full time Project with a mission to prove their caliber in problem solving, analysis and execution.

JOBS AND CAREERS WAITING?

Master of Hospital Administration degree will open up a variety of job opportunities. Core career avenues include: hospital operations, quality assurance in hospitals,

hospital project management, general administration, research, insurance management, public health management, hospital consultancy, etc.

Commonly, you will work with healthcare providers. In this setting, you can expect to work in the ongoing management of a health care facility, most often in a hospital. Job will likely revolve around general administration, HR, business development, risk management, patient care and safety, facilities management, finance, inventory, marketing of services and strategic planning, depending on your area of choice, talents and the needs of the specific facility.

Alternately one can work with health care suppliers, the organizations that give health care facilities like supplies, equipment, and financial and insurance services that are necessary for a hospital. These include pharmaceutical companies, training organizations, consulting firms, firms doing market research, and analysis, health care supply and equipment manufacturers, health care provider and insurance companies, and biotechnology companies.

Not to mention the opportunities available in Middle East, Europe and the West, who are looking for trained hospital management professionals.

OUTREACH LEARNING EXPERIENCE

Students are also deployed on variety of outreach and community activities like organizing specialty medical camps, awareness sessions, visits to various other hospitals including that of ISM, market research surveys and participating as delegate presenters and organising in national and international conferences in healthcare. These unique opportunities will bring out the innate talents of the students for proper communication, group dynamic behaviour and inculcate values for selfless service.

PLACEMENT TRAINING

All the students are imparted compulsory professional training for Campus Recruitment.

DEGREE STRUCTURE

The Two year (four semesters) postgraduate degree program is designed to provide an equal split between theory and practice.

ELIGIBILITY FOR ADMISSION

Any graduation with minimum 60% marks from recognized university.

Candidates with qualification in hospital-oriented subjects will be given preference.

MASTER OF PUBLIC HEALTH (MPH)

OVERVIEW

Master of Public Health Programme at Amrita Institute of Medical Sciences and Research Centre, Cochin, Kerala, India is designed to meet the healthcare needs of people. This being a full-time programme can be completed in two full years. This venture of Amrita Deemed University started two years ago and we are committed to make this course of as global standard. It is a 24 month full time course and has been designed to build an understanding, knowledge, skills and attitude for better public health practice and research. The standards and syllabus are at par with renowned international and national universities. All students receive a sound education in the core six suites and practicums.

Course Outline

The course consists of 6 core suites which are compulsory -

- Epidemiology
- Biostatistics
- Public Health Biology
- Environmental and Occupational Health
- Social and Behavioural science
- Health Care, Health System Management and Health Economics

Practicum

- Three practicum at the end of each semester
- Capstone project in the fourth semester

In all classes which are mandatory, the emphasis is on the relevancy of information and skills to public health practice.

The most important one and the most advantageous and key area in the course is the Applied Learning Experience (ALE), a self-designed field study

during the course. It lets students integrate what they have learned into a real-world public health problem in a community-based setting.

MISSION

Master of Public Health (MPH) program mission is the education and training of students within a course of study that promotes an understanding of the theoretical, scientific, and practical aspects of public health.

The objectives of the Master of Public Health programme are:

- To equip students to have an overall perspective on public health
- To create good programme managers in public health
- To inculcate interdisciplinary approach to problem solving skills in public health
- To encourage interdisciplinary research in public health
- To improve leadership skills in public health
- To prepare students to tackle current and emerging global public health problems such as pandemic flu, AIDS, bioterrorism, obesity, diabetes, disparities in access to healthcare, and many other critical public health problems.
- To recognize and make the students understand that in today's world, a thorough and rigorous public health education must embrace multiple areas viz. biostatistics, environmental health, epidemiology, health services administration, social and behavioural sciences, biological sciences, ethics, information technology, health policy and law in health.
- To have an in depth field experience that serves as a capstone project that helps students integrates knowledge across courses

Career Opportunities for MPH Graduates

Graduates of this program typically enter services as public health administrators, advisors, managers, researchers, practitioners, educators,

and consultants in a wide variety of public health and NGO and international agencies. Many serve as health educators or health promotion specialists in business, industry, higher education, voluntary agencies, government, and private health care settings.

Program Highlights

- Competency based
- Specially designed to develop leadership, communication and problem solving skills (ALE)
- Positioned for true integration of public health science and practice (ALE)
- Additional certifications as per the students' choices
- Includes 3 practicums and capstone project to give real experience before graduation
- Individualized Goals Analysis of each student

Scheme of Exam

- Internal assessment
- Modular Examinations
- University examinations

Certification Program

Two certification programmes will be offered during the course and the decision on the subject for certification will be the prerogative of Amrita Centre for Public Health.

Eligibility Criteria

Total Seats	Duration	Conditions of Eligibility for Admission to the Course
25	2 Years	<p><i>For Indian Students :</i></p> <ul style="list-style-type: none"> a) MBBS b) BDS c) BSc Nursing d) MSc Nursing e) Graduates from Pharmacy Science f) Graduate from Physiotherapy g) BSc Allied Health Sciences h) Graduate in Bio Medical Engineering i) Pharm D j) BSc Social science k) Bachelor Degree in AYUSH stream from a recognized University. <p>The minimum percentage for eligibility to the course is 50%</p> <p><i>Additional:</i></p> <ul style="list-style-type: none"> a) Experience in health field related to public health is desirable and is an added advantage. b) For International Students :- Should have reasonable score for TOFEL and GRE c) Should be governed by Amrita Vishwa Vidyapeetham norms for international admissions.

Sponsored students (Government of Kerala, Govt. of India and Non-government organizations): One seat each will be earmarked for these categories.

Age : The upper age limit was kept as 40 and for government sponsored candidates, it will be as per government norms.

The Eligibility criteria for the course are as follows:

Medical / Dental / Nursing / AYUSH / Pharmacy / Physiotherapy / Biomedical engineering / Allied sciences / Veterinary Sciences / Life Sciences / Statistics / Biostatistics / Demography / Population sciences / Nutrition/Sociology / Psychology / Anthropology / Social work / Agriculture

Demonstrated work experience in a healthcare-related field is highly desirable.

Duration of the course

This course is designed to be a two years' full time program which includes dissertation

Special Features of the course:

In order to ensure hands on experience, we provide opportunities for two practicums of which one will be group work and another will be individual field activity. This will enable the students to have a real time experience in the field of Public Health.

We also provide an opportunity for students to do Internship with potential employers for a month in Government organizations and also reputed NGOs as per the interest of the students.

Admission Procedure

Selection is based on the Marks obtained in the qualifying examination and Personal Interview and group discussion.

Indian Candidates

The submission of application is online through Amrita website. Prospective candidates will be evaluated on the basis of educational qualifications, professional experience relevant to the field of public health, group discussion and interview. There will be ONE seat each reserved for Kerala Government, Government of India and NGO sponsored candidate.

International Candidates:

Selection will be based on educational qualifications, professional experience, assessments made by the sponsoring organizations and a telephonic interview. International candidates have to provide certification for proficiency in English if required at the time of selection. They should also have the certificate of equivalence from national board. The international students should have reasonable score for TOFEL and GRE and also would be governed by Amrita Vishwa Vidyapeetham norms for international admissions.

Hostel / Accommodation:

The students are required to make their own arrangements for accommodation and transport. Only if hostel rooms are available, they will be provided with accommodation and the charges will be as per norms.



POST GRADUATE DIPLOMA IN MEDICAL RADIOLOGICAL SCIENCES (PGDMRS)

OVERVIEW

Medical physics is a profession that combines principles of physics and engineering with those of biology and medicine to affect better diagnosis and treatment of human disease while ensuring the safety of the public, patients and those caring for them.

Scope :

Most medical physicists are employed at universities and hospitals with a smaller number in research institutes, government health agencies, and industrial organizations. A few are self-employed, usually as consultants. Frequently, the hospital in which a medical physicist works is associated with a medical school, and the physicist is a member of the academic staff.

PGDMRS is a professional course at the Post Graduate level that prepares the students for clinical practice as a medical physicist. The PGDMRS course offers students course work and practical clinical training in Medical Radiological physics as it is applied to the diagnosis and treatment of human diseases. Required course work provides theoretical and practical training in radiation dosimetry, radiation biology, radiation therapy, imaging, and health physics. Graduates of this Post Graduate Medical Physics program typically go on to successful clinical and academic careers where they contribute to all specialty areas of medical physics.



Web Based Teaching :

PGDMRS uses a software A-VIEW for teaching by eminent faculties from across the globe. A-VIEW is an advanced multi-modal, multi-platform, collaborative e-learning solution which allows an instructor to teach or interact with a large number of learners transcending geography on a real-time basis through live audio video streaming and synchronized content sharing.

Eligibility Criteria

MSc Physics with minimum 60% of Marks

Number of Seats

Eight (8)

Duration

Course work and Practical: 12 months (First Year)

Internship and Project and Dissertation: additional 12 months (Second Year)

Admission Procedure

Selection is based on the Marks obtained in the Entrance Examination, qualifying examination and personal interview conducted by the Department.

Amrita School of DENTISTRY



The Dental School seeks to provide top quality, affordable, comprehensive education in oral and craniofacial care. The School ensures that students undergo an integrated educational experience that combines extensive clinical practice with rigorous course work.

We are a full-fledged establishment with all the mandatory requirements as per DCI norms and are indeed proud to say that our four batches of MDS students graduated from our school with 100% success result.

Our broad education programme and our success have shown that our students are better educated and wiser today. The investment we make in our students is certainly an investment for our future, allowing our graduates to continue to be leaders in dental care, not just in our country but also on a global platform.

The BDS course offered by Amrita School of Dentistry commenced in September 2003. It is housed in a self-contained four-storey building, having a built-up area of 154,000 sq. ft., and is one of the biggest dental colleges in Asia. The building includes pre-clinical dental laboratories, lecture halls, a conference centre, faculty offices, administrative offices, clinical treatment areas, small group discussion areas, a faculty practice, and a library. Sixty (60) students are enrolled for the BDS course in the School of Dentistry every year. The duration of the course is 4 years with 1 year compulsory rotating internship. The curriculum is in accordance with the regulations of the Dental Council of India. Student:Mentor ratio is 20:1.

An integrated approach combining extensive clinical practice with rigorous course work promotes better understanding of dentistry and its relationship to overall health. High quality training facilities are available in Head and Neck Surgery and Plastic and Reconstructive Surgery apart from regular classes in all specialties in dentistry such as Orthodontics and Dentofacial Orthopaedics, Prosthodontics and Crown and Bridge, Conservative Dentistry and Endodontics, Paediatric and Preventive Dentistry, Oral Medicine and Radiology, Periodontics, Oral and Maxillofacial Surgery, Oral Pathology and Microbiology, and Public Health Dentistry. The students are exposed to maxillofacial prosthetic rehabilitation carried out in the Department of Prosthodontics. A great deal of emphasis is placed on community oriented dental outreach programs. ASD extends the knowledge of oral health by

encouraging and assisting faculty in the pursuit of innovative research. In ASD, we give equal importance to cultural education. The School also stimulates and encourages the qualities of ethics, human values, and character that marks the true oral health professional.

A Diverse Patient Population

The Amrita School of Dentistry attracts a diverse patient population. Students have the opportunity to acquire a full range of clinical experiences, both within the dental school and the community, including treatment of emergency cases, medically compromised cases, and physically and mentally challenged patients. Students become adept at attending to the special needs of patients who have complex medical histories and may already be receiving treatment for a number of diseases.

Post Graduate Program

Post Graduate Program (MDS) has been functioning in nine specialities (Oral and Maxillofacial Surgery, Prosthodontics and Crown and Bridge, Conservative Dentistry and Endodontics, Perio-dontics, Orthodontics & Dentofacial Orthopedics, Oral Medicine & Radiology, Oral Pathology & Microbiology, Pedodontics & Preventive Dentistry, Public Health Dentistry). This is a three year course. The students admitted in Prosthodontics are given special training in Maxillofacial prosthesis and the Oral and Maxillofacial Surgery post graduates are provided training in the Head and Neck Surgery department also. Head and Neck Surgery is a multidisciplinary initiative to provide comprehensive treatment for the patient suffering from all major problems arising in the head and neck region such as congenital or acquired craniomaxillofacial deformity, otolaryngological disorders and cancer involving the head and neck region. The Department of Head and Neck Surgery is organized as a team, supported by the most modern diagnostic and treatment infrastructure. This is the first of its kind clinical service, which brings under one umbrella a multidisciplinary team of specialists in the fields of head and neck surgery, plastic surgery, maxillofacial surgery, neurosurgery and otorhinolaryngology for the management of complex ailments of the head and neck region. This

Amrita Health Sciences Prospectus 2020

distinguishes AIMS from other post graduate dental institutions. Department of Orthodontics and Dentofacial Orthopedics is an integral part of Sleep Medicine at Amrita Hospital.

Dental Mechanics Course

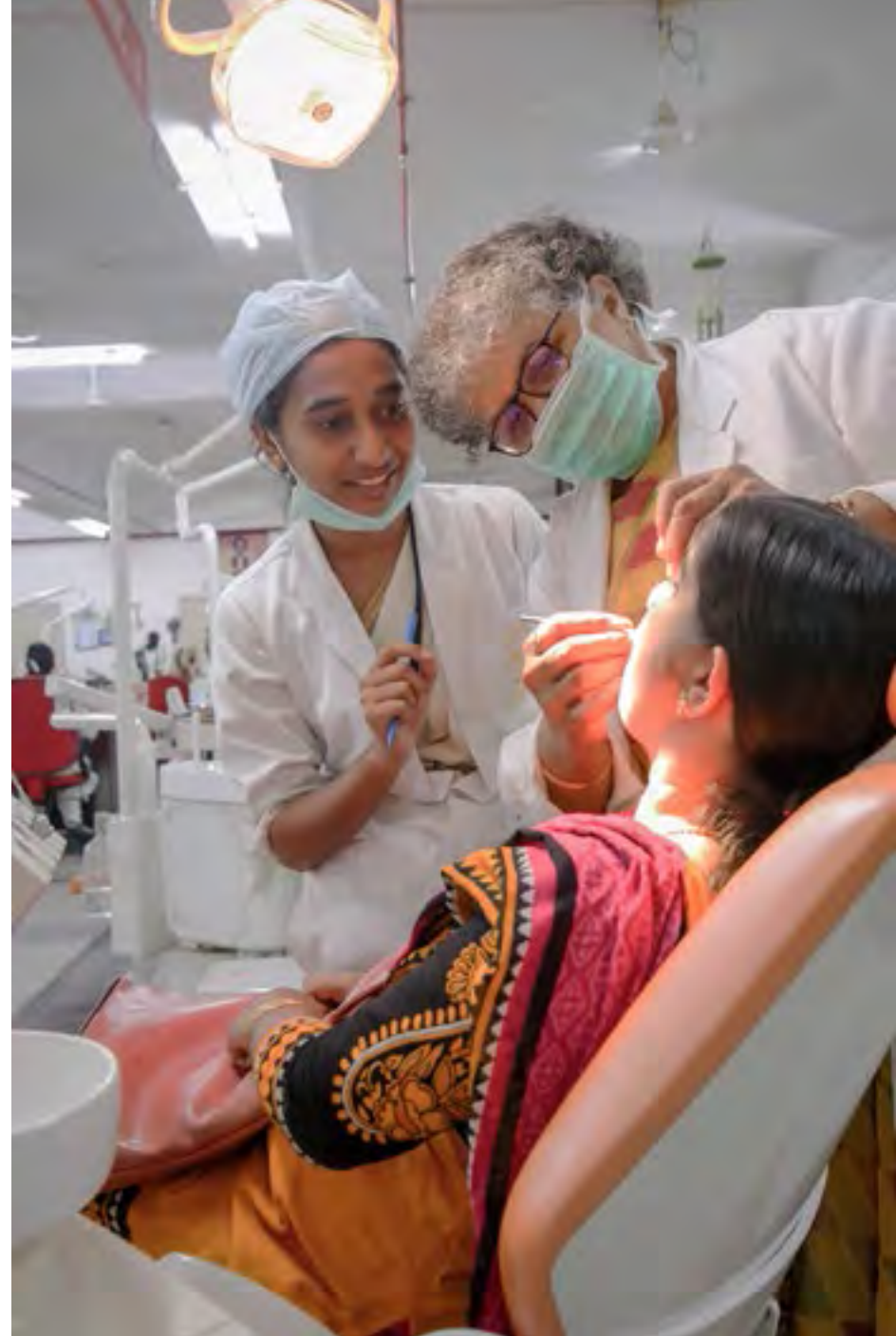
A two year diploma course in Dental Mechanics commenced during the academic year 2010-11 with 10 admissions. Amrita School of Dentistry is the first institution in the private sector in Kerala to commence such a course with the approval of the Dental Council of India.

Outreach - Dental Health Camps

As a part of Societal and Community Development program, Amrita School of Dentistry conducts free Dental Health Camps for the rural society and school children. In the Dental Health Camp conducted from October 2015 to November 2016, more than 7600 people were screened for oral diseases from 85 camps. The patients were examined and screened. A total of 9637 school children were screened from 33 schools in Ernakulam district within this period. Amrita School of Dentistry has a tribal centre at Amrita Kripa Charitable Hospital, Kalpetta, Waynad which provides basic dental treatment for the tribal population three days a month. A free denture treatment camp was organised in which 70 complete dentures were provided to elderly tribals free of cost. The treatment for disabled children is also carried out on a regular basis in the Departments of Pedodontics and Public Health Dentistry.

Research

Research is an integral component of dental education. Considering this, much emphasis is given for research right from the undergraduate level. The School has initiated a number of substantive developments to support the research endeavor and to demonstrate our commitment to support research in the faculty. All departments of Dental school have collaborative research programmes with Department of Nanosciences.



IMPACT FACTOR OF SOME OF THE JOURNAL PUBLICATIONS OF OUR FACULTY

SL NO	JOURNAL NAME	IMPACT FACTOR	NO. OF PUBLICATIONS
1	Journal of Dental Research	4.14	1
2	Annals of Dental Speciality	4.12	1
3	International Endodontic Journal	2.27	1
4	Community Dentistry and Oral Epidemiology	2.1	1
5	British Medical Journal	2.06	1
6	Current HIV research	1.98	1
7	International Journal of Public Health	1.56	1
8	International Journal of Pediatric Dentistry	1.54	4
9	Journal of Implantology	1.51	1
10	Online Journal of Public Health Informatics	1.45	1
11	Dental Traumatology	1.2	1
12	Asian Pacific Journal for Cancer Prevention	1.27	1
13	Journal of Health, Population and Nutrition	1.12	1
14	International Journal of Clinical Pediatric Dentistry	1	1
15	Journal of Indian Academy of Oral Medicine and Radiology	0.66	1
16	Journal of Indian Dental Association	0.64	2
17	IOSR Journal of Dental and Medical Sciences	1.486	4
18	International Journal of Oral and Maxillofacial Surgery	1.52	6
19	Journal of Oral and Maxillofacial Pathology	1.01	1
20	Contemporary Clinical Dentistry	0.2	4
21	Indian Journal of Pediatric Dentistry	1.3	2
22	American Journal of Dentistry	0.85	1
23	Journal of Clinical and Pediatric Dentistry	0.3	1
24	New York State Dental Journal	0.34	1
25	International Journal of Dental Sciences	3	1
26	Journal of Periodontology	2.84	3

27	Journal of Clinical and Diagnostic Research	0.3	7
28	Journal of Pharmacological and Bio applied Sciences	1.36	2
29	International Journal of Dental and Health Sciences	0.9	2
30	Dental Research Journal (Isfahan)	4.8	1
31	Journal of Oral hygiene and health	0.43	1
32	Accountability in Research	0.89	2
33	Oral Radiology	1.49	2
34	International Journal of Medical and Health Sciences	3.51	1
35	Journal of Oral and Maxillofacial Surgery, Medicine and Pathology	0.189	2
36	Journal of Oral Implantology	0.74	1
37	Journal of Indian Prosthodontic Society	0.78	3
38	Journal of Dental Science and Research	0.79	1
39	International Journal of Applied Sciences	0.19	1
40	Journal of International Oral Health	0.96	1
41	International Dental Journal	0.95	2

PUBLICATIONS BY DEPARTMENT

DEPARTMENT	NATIONAL PUBS	INTERNATIONAL PUBS
Oral & Maxillofacial Surgery	12	24
Oral Medicine & Radiology	75	35
Pedodontics & Preventative Dentistry	37	45
Orthodontics & Dentofacial Orthopaedics	26	45
Periodontics	54	34
Conservative & Endodontics	40	27
Oral Pathology & Microbiology	42	10
Prosthodontics & Crown & Bridge	58	40
Public Health Dentistry	44	30

INNOVATIONS & BEST PRACTICES

Department of Prosthodontics is one of the only few centers in India to use Silicone Prosthesis in patients with maxillofacial affliction

Collaboration with other departments like Nano Sciences, Head & Neck Surgery, etc., for PG Research

Fish & Bowl method of learning for UG's

Cultural education

Tele Dentistry which facilitates exchange of ideas with other institutes.

Students & Parents can access their periodic progress (Marks & attendance) through "Amrita Vidya" (Academic Management Suite)

DENTAL LIBRARY

YEAR	BOOKS	TITLES	JOURNALS	E-JOURNALS
2018	3181	1525	47	15



Beyond Classroom Training CDE /Conferences / Workshops

Trauma to teeth & its management

Current Concepts in Post-Endodontic Restorations

Smile India Smile – Ceramex Duo Restorative

10th Midterm Conference & 2nd PG Convention Of Caesok

**2nd Intercollegiate Tele-Clinical Society Meeting
with Sri Ramachandra Dental College**

Lasers In Dentistry

Clinical Considerations For Composite Restorations

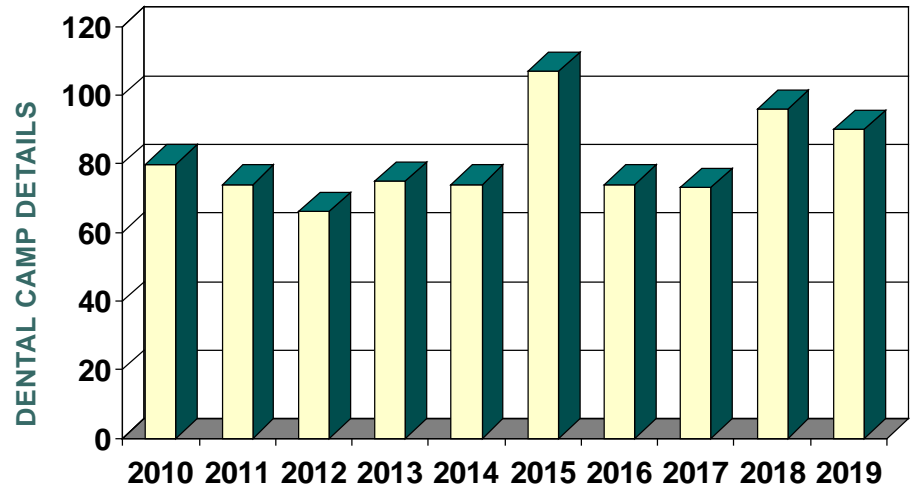
Predictable Success With Metal – Free Ceramics

Lightspeed Instrumentation System And Simplifill Obturation

Tips And Tricks In Aesthetic Dentistry



Extension Activities & Institutional Social Responsibility



2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
80	74	66	75	74	107	74	73	96	90



BDS (Bachelor of Dental Surgery)

Eligibility

As per NEET UG-2020 norms

Admission Procedure

Selection is based on the rank obtained in the National Eligibility cum Entrance Test (NEET) and counselling allotment by DGHS.

Degree Details

Degree	Duration (in years)	Seats
BDS	4 years plus 1 year internship	60



MDS (Post Graduate)

Eligibility

As per NEET PG-2020 norms

Admission Procedure

Selection is based on the rank obtained in the National Eligibility cum Entrance Test (NEET) and counselling allotment by DGHS.

Degree Details

Degree	Duration (in years)
MDS	3 years

Diploma in Dental Mechanics

Eligibility

Pass in +2 with 55% aggregate marks in Physics, Chemistry, Biology and English from any State Higher Secondary Board or equivalent. Candidate should have completed 17 years but should not have completed 23 years of age by 31st December in the year of admission.

Admission Procedure*

Selection is based on the marks obtained in the qualifying examination and a personal interview.

Course Details

Course	Duration (in years)
Diploma in Dental Mechanics	2 years

*Subject to change, to comply with the guidelines from UGC/DCI other competent authorities.

Amrita College of NURSING



The Amrita College of Nursing is committed to excellence in nursing education, research and development of leadership skills and human values. The Institute provides an ambience comprising state-of-the-art infrastructure, unparalleled technical expertise, diligent faculty, and above all, the instilling of values based on the rich Indian tradition and ancient culture.



The Amrita College of Nursing is committed to excellence in nursing education, research and development of leadership skills and human values. Situated within the Health Sciences campus in an exclusive building, the College provides an ambience comprising state-of-the-art infrastructure, unparalleled technical expertise, diligent faculty, and above all, the instilling of values based on the rich Indian tradition and ancient culture. The Amrita College of Nursing (recognized by Kerala Nurses' & Midwives' Council and Indian Nursing Council) is a centre for observation visit by students and faculty in and outside the state. It is the first college to start MSc Nursing in the self-financing sector in Kerala in 2009.

VISION

To be a global center of excellence in providing quality nursing education rooted in values, research and in preparing professionals to lead safe, dynamic nursing practice through clinical partnerships.

MISSION

Amrita College of Nursing is committed to:

- Provide nursing education programmes to prepare professionals capable of providing safe, comprehensive and compassionate nursing care in an ever changing health care environment.
- Prepare advanced practice nurses, educators and administrators (capacity building).
- Enhance research that improves quality of life of individuals / families and has an impact on nursing practice.
- Integrate nursing education, research and practice through clinical partnership.

AIM

The aim of the undergraduate nursing program is to prepare graduates who can provide competent, compassionate and evidence based preventive, promotive, curative and rehabilitative nursing care in varied settings, making independent decisions as and when required, considering the safety and rights of individuals/groups and personal and professional development.

OBJECTIVES

On completion of the four year B. Sc. Nursing programme the graduate will be able to:

- Apply knowledge from biological and behavioral sciences, medicine and nursing in providing nursing care to individuals, families and communities.
- Demonstrate awareness of life style and other factors, that affect health of individuals and groups.
- Provide nursing care based on steps of nursing process in collaboration with the individuals and groups.
- Demonstrate critical thinking skill in making decisions in all situations in order to provide quality care.
- Utilize the latest trends and technology in providing health care.
- Provide promotive, preventive and restorative health services in line with the National Health Policies and programmes.
- Practice within the framework of code of ethics and professional conduct, and acceptable standards of practice within the legal boundaries.
- Communicate effectively with individuals and groups, and members of the health team in order to promote effective interpersonal relationships and teamwork.

- Demonstrate skills in teaching to individuals and groups in clinical/ community health settings.
- Participate effectively as members of the health team in health care delivery system.
- Demonstrate leadership and managerial skills in clinical/community health settings.
- Conduct need based research studies in various settings and utilize the research findings to improve the quality of care.
- Demonstrate awareness, interest and contribute towards advancement of self and of the profession.
- Demonstrate personal characteristics and attitudes (like personal integrity, responsibility, reliability and showing concern for other individuals) essential for a professional.

COURSES OFFERED

BSc in NURSING

A four-year degree program with an annual intake of 100 students. An all-round academic and clinical experience is offered through classroom teaching, varied clinical experiences, conferences, health exhibitions, talks by eminent personalities and visits to various places. The experienced and stable faculty (37 postgraduates in various specialities) are a valuable asset to this Institution.

MSc Nursing

The program is offered in four broad specialities (Medical Surgical Nursing, Obstetric and Gynaeco-logical Nursing, Child Health Nursing and Mental Health Nursing) with an annual intake of 36 students.

The sub-specialities offered under Medical Surgical Nursing include Cardio Vascular & Thoracic Nursing, Oncology Nursing, Neurosciences Nursing and Nephro-Urology Nursing. Clinical experiences for the MSc Nursing Program

in all the specialities are provided in the parent hospital, Amrita Institute of Medical Sciences.

Facilities

The College of Nursing provides excellent library facilities, e-learning and all the required laboratory facilities including mannequins, simulators, etc. The laboratories are as follows:



- Pre-clinical Laboratory
- Community Health Nursing Laboratory
- Maternity Nursing Laboratory
- Child Health Nursing Laboratory
- Nutrition Laboratory
- Computer Laboratory
- Audio Visual Laboratory
- Language Lab

In addition, faculty and students get experience in the central Simulation Lab in the campus with 100 mannequins.

All the classrooms are provided with LCD and intranet facilities to facilitate the teaching learning process. Through intranet, all the students can access the Powerpoints and other ICT enabled learning materials prepared by different faculty.

Student Exchange Programme

Students from Lee Kong Chian School of Medicine, Singapore had collaborative internship in the department of Community Health Nursing for the last 3 years.

FACULTY ACHIEVEMENTS

• Faculty with PhD – 1

Prof. Sunil M.

• Faculty pursuing PhD - 8

Prof. Anila K.P.,

Prof. Kanmani J.,

Prof. K.T. Moly,

Prof. Sheela Pavithran,

Prof. Sreedevi P.A

Ms. Linda Varghese

Ms. Anju Philip T.

Ms. Sreejamol M.G.

LIBRARY

The Nursing College library has a wide range of textbooks and nursing journals, both Indian and foreign. There is a total of **6223 books** and the following **online databases**:

- PROQUEST
- Clinical Key
- Ovid
- Uptodate
- Springer Link
- EBSCO
- Scopus
- Dynamid
- Medline Complete
- BMJ Journals
- Nursing Centre Plus



BEST PRACTICES

FACTORS THAT DIFFERENTIATE OUR ACADEMICS

Clinical Orientation - 50 hrs.

Clinical Exposure to special areas
Head and Neck ICU

Skill Training

Integrated Clinical Experience

UG Publications

Exposure to Tribal community

Participation in Medical Camps

Participating in Workshops and Conferences

- Strong Clinical Environment for Professional Practice
- Structured Cultural Education
- Student Exchange programme

- Faculty Student Projects / UG publications
- Interactions with students of other colleges

- Internal Quality Assurance Cell For quality control
- Extended class committee
- Student Clubs

- Examinations & results are in time
- Hostel – optional for PG students

- Individual Teacher evaluation
- 360° evaluation

FEEDBACK FROM STUDENTS (2013-2018)

Excellent Clinical Experience

Timely completion of the course

Expert and experienced Principal and faculty

College environment

Extracurricular activities

Library facilities

Opportunities to attend conferences



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“My experience from Amrita College of Nursing has meant career advancement and challenging position in US ARMY. The learning approach with keen focus on learning and shaping up skills are much required in today’s health care industry. The guidance and support from the faculty were remarkable and they gave me confidence and direction towards a successful career.”

Shiju K R, Health Care Specialist, US Army
B. Sc Nursing - 3rd batch



“I belong to the very first Batch of B Sc Nursing. When I look back, I am so happy that I chose Amrita for my nursing studies. We were lucky to have such gracious and considerate teachers and faculty through out our time at Amrita. The training and learning received from Amrita, equipped me with top-notch professional knowledge and skills and I believe so will be the case of any other Amritans.”

Nissamudeen Abdulmanaf, Registered Nurse, Campbell Town public Hospital ICU, Australia
B. Sc Nursing - 1st batch



“Memories never vanish. The college and its Environment equipped me for the real world. The college had the luxury of the best and highly qualified faculty.”

Parvathy Radhakrishnan, Team Leader, Taymer Nursing Home, UK
B. Sc Nursing - 4th batch



“Since I am working in defense ...I am proud to work for the nation”

Captain Saritha S, Nursing officer, Military Nursing Service, Pune
B. Sc Nursing - 2nd batch

BSc Nursing

Eligibility

Must have passed 12th standard in the first attempt and with a minimum of 60% in English and 60% in Physics, Chemistry and Biology taken together, from any State Higher Secondary Board or equivalent. NRI's and Persons of Indian Origin (PIO) who qualify from foreign universities will have to produce an equivalence certificate from the Association of Indian Universities, New Delhi. Candidate should have completed 17 years but should not have completed 23 years of age by 31st December in the year of admission. The candidates shall be medically fit.

Admission Procedure*

Selection is based on the rank obtained in the All India entrance examination conducted by Amrita Vishwa Vidyapeetham

Degree Details

Degree	Duration (in years)	Seats
BSc Nursing	4 years	100

* Subject to change, to comply with the guidelines from UGC / INC / KNMC / other competent authorities.

MSc Nursing**Eligibility**

1. The candidate should be a Registered Nurse and Registered Midwife with any State Nursing Council.
2. The candidate should have passed BSc Nursing or BSc Hons. Nursing or Post Basic BSc Nursing with minimum of 55% aggregate marks from an Institution recognised by the INDIAN NURSING COUNCIL.
3. Candidates should be medically fit.
4. Minimum 1 Year of work experience after basic BSc Nursing or prior or after Post Basic BSc Nursing.

Admission Procedure*

Selection is based on the rank obtained in the All India entrance examination conducted by **Amrita Vishwa Vidyapeetham**.

Degree Details

Degree	Duration (in years)	Seats
MSc Nursing	2 years	Total 36
a) Medical Surgical Nursing	2 years	17
b) Paediatric Nursing		9
c) Psychiatric Nursing		5
d) Obstetrics & Gynaecological Nursing		5

* Subject to change, to comply with the guidelines from UGC / INC / KNMC / other competent authorities.

Note: Experience acquired after registration with Nursing Council only will be counted.

Amrita School of PHARMACY



The School of Pharmacy strives not only to provide quality education in pharmaceutical sciences but also to establish itself in research and serves as an ideal platform for the overall development of highly competent pharmacy professionals.



Amrita School of Pharmacy, an integral component of AVVP, is the first to start functioning among the schools under Health Sciences campus. Located in the vibrant city of Kochi, Amrita School of Pharmacy offers training for one of the most sought after professions. The School's commitment to excellence in healthcare is in line with the overall objective of the Kochi - based Health Sciences campus of AVVP.

The School of Pharmacy strives not only to provide quality education in pharmaceutical sciences but also to establish itself in research and serves as an ideal platform for the overall development of highly competent pharmacy professionals. The School maintains an exemplary clinical practice and conducts community outreach programmes that address the needs of Kochiites and the society at large.

Amrita School of Pharmacy is housed in a self contained, calm and quiet five storied building with a built up area about 90,000 sq.ft. It has 17 laboratories, a full fledged library and all other facilities for academic programmes at UG,PG and research levels.

PROGRAMMES OFFERED:

- BPharm (4 years – 8 semesters)
- MPharm (2 years – 4 semesters)
 1. Pharmacy Practice
 2. Pharmaceutics
 3. Pharmaceutical Chemistry
 4. Pharmacology
- Doctor of Pharmacy (PharmD)
 1. PharmD Regular (6 years)
 2. PharmD Post Baccalaureate (3 years)
- PhD in Pharmaceutical Sciences



ACADEMIC PROGRAMMES

UNDERGRADUATE

BPharm

Bachelor of Pharmacy (B. Pharm.) is an undergraduate academic degree to learn and acquire adequate knowledge, necessary skills to practice the profession of pharmacy. The programme is a versatile interdisciplinary programme preparing graduates with a sound knowledge and understanding of the science, technology and practice of pharmacy. The core subjects include Pharmaceutical Chemistry and Pharmaceutical Analysis (Chemistry of Drugs), Pharmaceutics, Pharmacology, Pharmacognosy and Pharmacy Practice.

Knowledge

- Organic, Inorganic, Heterocyclic, Stereo and Medicinal Chemistry
- Isolation, Identification and Analysis of Phytoconstituents Including Chromatographic Techniques
- Basic Concept of Social Life, Psychology, Environmental Sciences and Cultural Education
- Microbiology, Biochemistry and Biotechnology
- Preparation and Evaluation of Pharmaceutical Dosage Forms
- Various Unit Operations Used in Pharmaceutical Industries
- Fundamentals and Applications of Pharmacokinetics and Pharmacodynamics in Pharmaceutical Development
- Formulation and Evaluation Aspects of Cosmetics etc.

Skills

- Computer Aided Drug Design and Qsar
- Conventional and Microwave Drug Synthesis

- UV & IR Spectrophotometer, Column, Thin Layer and High Pressure Liquid Chromatography
- Aseptic Handling Techniques
- Handling of Basic Pharmaceutical Equipment and Designing of Various Dosage Forms
- Handling and Processing of Biological Samples and Estimation of Common Biochemical, Haematological and Physiological Parameters

POSTGRADUATE

Pharm D

Doctor of Pharmacy is a hospital oriented globally accepted pharmacy programme. This is a six-year programme after completion of the plus two with science stream. The programme is designed to make the students competent as per the global demand in management of patient medication therapy and improve patient outcomes. The students undergo one year internship/residency during the final year (6th year) in the various major departments of the specialty teaching hospital in the campus

Pharm D (PB)

This is a three year programme after B. Pharm. graduation. This programme also has 2 phases like Pharm. D. (Regular) wherein the students have theory and practical classes in the first two years and undergo internship in the various departments in the hospital during III Year (Phase 2)

KNOWLEDGE

- Organic, Inorganic, Heterocyclic, Stereo and Medicinal Chemistry
- Isolation, Identification and Analysis of Phytoconstituents Including Chromatographic Techniques
- Basic Concept of Social Life, Psychology, Environmental Sciences and Cultural Education

- Microbiology, Biochemistry and Biotechnology
- Preparation and Evaluation of Pharmaceutical Dosage Forms etc...

SKILLS

- Conventional and Microwave Drug Synthesis
- UV & IR Spectrophotometer, Column, Thin Layer and High Pressure Liquid Chromatography
- Aseptic Handling Techniques
- Handling of Basic Pharmaceutical Equipment and Designing of Various Dosage Forms
- Skill in Handling and Processing of Biological Samples and Estimation of Common Biochemical, Haematological and Physiological Parameters etc.

M Pharm

M. Pharm. is offered in 4 specializations. It is a 2 years (4 semesters) Masters Programme after B.Pharm.

PHARMACEUTICS

This program helps the students to become experts in formulation development assessment of bioavailability and other technical aspects of drugs and cosmetics and help them to become competent professionals to work in the various units of the pharmaceutical industry.

KNOWLEDGE

- Various Regulatory Filing in Different Countries, Submitting Regulatory Documents and Post Approval Requirements
- Develop Cosmetics and Cosmeceuticals with Desired Safety, Stability and Efficacy
- Pharmaceutical Product Development and Translation from Laboratory to Market etc.

SKILLS

- Identification of Drug Molecule for Drug Delivery Purpose
- Handling of Basic Pharmaceutical Equipments
- Kinetic Modelling Software (Winonline)
- Preparation and Dispensing of Extemporaneous Formulations etc.

PHARMACEUTICAL CHEMISTRY

This programme gives necessary orientation and practical training in design, synthesis and characterization of medicinal compounds.

KNOWLEDGE

- Retrosynthesis, Heterocyclic Chemistry, Protection and Deprotection Techniques
- Advanced Spectral Analysis Involving NMR, Mass Spectrometry, IR of Various Drugs
- Computer Aided Drug Design, Molecular Modeling, Docking etc..

SKILLS

- Drug Synthesis (Conventional and Microwave) Drug Analysis by HPLC, UV and Fluorimetry Spectral Interpretation by IR, NMR, MS
- In-Vitro and In-Vivo Studies
- Scientific Writing etc.

PHARMACOLOGY

This programme aims to produce competent pharmacologists with necessary training to enable them to contribute to the different stages of drug development process including drug designing, preclinical and clinical development.

KNOWLEDGE

- Systemic, Cellular and Molecular Pharmacology
- Pharmacological and Toxicological Screening Methods



- Various Regulatory Requirements such as CPCSEA, OECD and Bio Safety Aspects etc.

SKILLS

- Basic Animal Handling and Preparation of B-Form for Animal Studies
- Preparation of SOPs for Various Pharmacological Instruments
- Biochemical, Haematological Analysis, Cell Line Studies and Therapeutic Drug Monitoring etc.

PHARMACY PRACTICE

The aim of this programme is to equip the pharmacy professional with the required skills, attitudes and knowledge to become a practicing clinical pharmacist and mould him as an efficient member of the health care team.

KNOWLEDGE

- Clinical Pharmacokinetics & Therapeutic Drug Monitoring
- Clinical Research and Pharmacovigilance
- Quality use of Medicines and Pharmacoeconomics Medical Biostatistics and Softwares etc.

SKILLS

- Identification, Reporting and Management of Drug
- Medication Reconciliation, Management and Patient Counselling
- Perform Key Pharmacoeconomic Analysis Handling of Information Queries Research Areas- Clinical Trials etc.

PhD in Pharmaceutical Sciences

Amrita School of Pharmacy offers Ph.D degree in various areas of drug Research. Topics related to Pharmacy Practice, Pharmacology, Pharmaceutical Chemistry, Herbal drugs, Quality Control, Biotechnology, Nanotechnology, Pharmaceutical Management and other aspect sof Pharmaceutical Sciences are some of the special areas of interest of Ph.D Program.

BEST PRACTICES

- Revised and updated curriculum
- Funded students projects
- Regular involvement in outreach activities
- Financial support for award winning poster presentations and articles published in scopus indexed journals
- Support to attend co curricular and extra curricular activities in collegiate and inter collegiate events
- Value education sessions
- Soft skill training for all final year students
- Placement support
- Scheduled clinical posting at various clinical departments with a clinical preceptor
- English language lab

MAJOR FACILITIES

LIBRARY FACILITIES

The school has excellent library facilities with the following:

- No. of books : 5963
- No. of titles : 2147
- No. of journals : 43
- Online Journals : 1500
- E-Books : 110

RESEARCH FACILITY

- Cutting edge translational research and technology development of Nanopharmaceuticals in collaboration with ACNSMM (Amrita Centre for Nano Sciences and Molecular Medicine

PILOT PLANT

Development of oral solid dosage form such as tablets, capsules and extended release pellets, phase contrast microscope

CELL CULTURE LAB

Biosafety cabinet for cell culture, hot air oven, autoclave phase contrast microscope, fluorescent microscope, CO₂ incubators for establishment & maintenance of cell lines (cancerous & normal cell lines), in vitro cytotoxicity assay for screening of anticancer compounds (natural & synthetic) apoptosis assays

INSTRUMENTATION LAB

Fourier transform infrared (FT/IR spectrophotometer), high performance liquid chromatography (HPLC), UV-visible spectrophotometer, spectrofluorimeter, ELISA reader, flame photometer, biovia discovery studio software for insilico drug design studies for analytical method development and validation, therapeutic drug monitoring, bioavailability profiling, drug release studies, drug polymer interactions

PG RESEARCH LABS

Our school houses advanced research labs for Pharmaceutics, Pharmaceutical Chemistry & Pharmacology

ANIMAL HOUSE

The animal house facility for the health sciences campus located close to the pharmacy school is approved by CPCSEA for both animal breeding and experimentation, for small as well as large animals. The facilities like animal MRI, nude mice facility, histopathology lab, animal cathlab etc. make it an outstanding preclinical research facility for the campus.

RESEARCH ACTIVITIES IN LAST 3 YEARS

- No of Scopus indexed publications - 167
- Poster presentations - 117
- Students projects completed - 142

NBA ACCREDITATION FOR B.PHARM PROGRAMME



B.PHARM & B.PHARM LATERAL ENTRY			
No of seats	Duration	Eligibility	Selection
60	4 years (8 semesters)	Pass in plus two or equivalent with 50% marks in Physics, Chemistry & Biology. In place of Biology, Biotechnology/Computer Science or Maths are also eligible.	Selection of candidates is on the basis of the marks obtained in the qualifying examination and personal interview.
6	3 years (6 semesters)	Pass in Diploma in Pharmacy (D.Pharm)	
PHARM. D.			
30	6 years (Five years of studies plus one year internship or residency)	Pass in plus two or equivalent with 50% marks in Physics, Chemistry & Biology. In place of Biology, Biotechnology or Computer Science or Maths are also eligible.	Selection would be based on the marks obtained in the qualifying examination, performance in entrance exam and personal interview.
M. PHARM.			
10 seat each in Pharmaceutics, Pharmacology,Pharmaceutical Chemistry, Pharmacy Practice.	2 years (4 semesters)	I) B.Pharm degree from institutions with PCI's approval II) Not less than 50% for all the subjects of B.Pharm from second year onwards III) GPAT score preferred for M.Pharm admission	Selection of candidates is on the basis of their B.Pharm marks and personal interview.
PHARM. D. (PB)			
10 seats	3 year (2 year of studies plus one year internship or residency)		

Amrita Centre for Nanosciences & Molecular Medicine



Amrita Centre for Nanosciences & Molecular Medicine (ACNSMM) serves both as the research wing of Amrita Institute of Medical Sciences as well as an independent Centre with its own nonmedical research areas. ACNSMM is an independent Centre under the Amrita University with both research and academic components.

Recent advances in Nanosciences and Technology and Molecular Medicine have created an explosion of potential applications in the field of medical sciences and engineering, including new medicines and diagnostic systems, energy and electronics.

ACNSMM is at the forefront of many of these areas. In the biomedical applications of nanotechnology, ACNSMM is one of the top institutes in India because of its close integration with the super-specialty hospital and its strong emphasis on clinical applications. In recognition of this, the Ministry of Science and Technology, Government of India has designated the Centre as a Thematic Unit of Excellence in Medical Bio Nanotechnology. In the energy area, ACNSMM is the only centre in India that is fully integrated with manufacturing capability of different types of solar modules along with R&D in storage integrated solar modules. The solar division of ACNSMM is also a recognized Centre by the Ministry of New and Renewable Energy (MNRE) of the Government of India. ACNSMM is also equipped with a state of the art Good Manufacturing (GMP) facility for the clinical translation of in-house inventions. The facility is currently involved in developing modalities for early detection and treatment of cancer. The Centre has state of the art facilities in biomedical and energy areas and, in this respect, is the only such facility in India offering such a comprehensive R&D environment.

The Centre offers Master of Technology programs and Master of Science Programs in Nanomedical Technology and in Nanotechnology and Renewable Energy and in Molecular Medicine. We are only one of two Centres in India offering an MTech degree in Molecular Medicine. In total there are over 60 students currently doing MTech and about 75 PhD students in various advanced research and product development areas. All PhD students and qualified Master students are supported in their research through grants and fellowships. Both MTech and PhD students have a thesis requirement and all students therefore get extensive experience in hands-on research, experience in advanced equipments and research methodology.

In the biomedical area some of the leading focus areas of research is in the development of natural tissues and organs through tissue engineering using

biodegradable scaffolds, design and development of drug delivery systems for cancer, neuro-degenerative diseases, pain management and infectious diseases and the development of new imaging and diagnostic tools using nanotechnology. In the energy area, quantum dot-based dye sensitized solar cells are under investigation, as also is the development of advanced long-life batteries and pseudo-capacitors and solar integrated storage technologies.

Some of the advanced state of the art research laboratories that have been established are:

High Resolution Microscopy Laboratory with HRTEM with STEM capability, a high resolution Scanning Electron Microscope and Atomic Force Microscope and a Fluorescence microscope. Recent additions to the lab include the new generation Spectral Confocal Laser Scanning Microscope and scanning confocal Raman microscope.

- **MALDI-TOFF Mass Spectrometer Laboratory** for identification of proteins.
- **A class 10,000 cell culture facility** with multiple stations and equipped with an advanced patch clamp fluorescence cell manipulator and injector microscope for mechanistic studies
- **Proteomics Laboratory** with a Luminex BioPlex 200 system for identification of a range of proteins of proteins
- **A 7 Tesla Animal MRI Imaging Laboratory** for in-vivo biodistribution studies
- **Nanochemistry Laboratory** for wet chemical processing of various types of nanomaterials such as inorganic, metallic and polymeric nanoparticles.
- **Nanocharacterization Laboratory** with FTIR, UV-VIS Spectrophotometer, Spectrofluorimeter, Thermal Analysis Systems (DSC, TGA/DTA) and Particle Sizer with Zeta Potential Analyser for physico-chemical characterization of nanomaterials.

- **Mechanical Testing and X-ray Diffraction Laboratory** with a servohydraulic mechanical testing system for mechanical characterization of samples and a powder x-ray diffractometer for studying the crystallinity of samples.
- **Polymer Chemistry Laboratory** for processing of polymeric nanomaterials and their composites, with Gel Permeation Chromatograph for the characterization.
- **Nanofiber Preparation Laboratory** with multiple systems lined up for electrospinning polymeric solutions onto stationary, rotating as well as translating targets and setup for fabricating three dimensional scaffolds. Viscosity, contact angle and surface tensiometer and independent hoods for electrospinning are setup in the laboratory.
- **Polymer Processing Laboratory** for melt processing of polymers as well as nanocomposites using Minijet Haake mixing instrument and Minilab Haake moulding machine.
- **A Physico-Chemical Characterization Laboratory** with FTIR, DSC, UV Vis, tensile and gel tester, DLS system and TG-DTA
- **Tissue Nanoengineering Laboratory** with several equipments for molecular biology studies including PCR, RT-PCR, Western Blotting apparatus, Chemi-doc system, Microplate Reader, Gel doc system, Multimode Plate Reader, etc.
- **Drug Delivery Laboratory** equipped with facilities for carrying out preparation of nano drug delivery vehicles for hydrophobic and hydrophilic drugs using biocompatible, biodegradable polymers and an HPLC system for quantitative determination of drug entrapment and release.
- **Nanotoxicology Laboratory** equipped with a non-invasive, whole animal multispectral imaging system having fluorescence and X-ray imaging capabilities.
- **Nanomedicine Laboratory** having facilities for preparing varieties of polymeric and inorganic nanomedicines for targeted and non-targeted cancer therapy and diagnosis, malaria, inflammation, etc.
- **RNAi Laboratory** for developing targeted nanomedicine based gene silencing with all facilities for genomic studies.
- **A Central Facility** equipped with a range of freezers, HPLCs, centrifuges, lyophilizers, DNA Sequencer, Digital HPLC, Multimode Plate Reader and core facility for isolation and characterization of stem cells from various sources including umbilical cord vein, umbilical cord blood and bone marrow.
- **A FACS Laboratory** with state-of-the-art Flow Cytometer with cell sorter for diagnostics and stem cell characterization and isolation.
- In the Technology and Energy areas, additional advanced state of the art laboratories include:
 - Thin Film deposition Laboratory with Spray Pyrolysis Deposition system and associated module robotics for inorganic films and Climate Controlled Electrospinning deposition to include organic films
 - XPS Laboratory for surface analysis of materials
 - Pseudo-Capacitor Laboratory with Glove Box and characterization facilities
 - Solid State Battery Laboratory for processing and characterization of Li ion based solid state batteries
 - Nano Carbon Laboratory with CVD for graphene and carbon nanotube processing



Four-chamber vacuum cluster tool for making advanced batteries, including solid-state batteries.



Good Manufacturing Practice (GMP) lab which is a clean room facility with advanced equipment that is being used to manufacture biomedical devices and nano medicines.



- Hydrogen Storage Laboratory for processing and characterization of alloy nanoparticles for hydrogen storage
- A Core facility with Solar simulator, Electrochemical scanning microscope, battery tester, Ball Milling Machine and Spectroscopic Ellipsometer
- A GLP (Good laboratory Practices) Facility
- GLP is an advanced high accuracy analytical facility equipped with HPLC, Protein characterization system, Protein Micro-array etc.
- A GMP Facility (Good Manufacturing Practise) ISO Class1000, 10000 and 100000 clean rooms, separate facility for manufacturing of biomedical devices and Nano-oncology therapeutics, Isolators for handling and preparation of cytotoxic drugs, GC 5000 Gamma irradiator for sterilization of finished products

Job Opportunities:

On completion of the course the students can be expected to be immediately absorbed by several industries, such as pharmaceutical companies, biotechnology companies, research institutions in biotechnology, medicine and technology areas. Many of our alumni from early batches are currently

working as scientists in various premier institutes in and out of the country.

About the Faculty

All the members of the faculty associated with ACNS are PhD holders with several years of post-doctoral experience in active research from around the world, with training in Physics, Chemistry, Materials Science, Nanotechnology, Molecular Medicine, Biochemistry and Genetics. There are currently 20 full time faculties in ACNSMM.

Awards and Recognitions Received by the Centre

The Centre is a recipient of over 110 major grants from the Government of India in various research areas related to medical and energy areas.

- The Director, Professor Shantikumar Nair is a 2014 recipient of the Professor C N R Rao Bangalore India Nanoscience Award for Excellence in Research in Nanotechnology and also a past recipient of the MRSI (Materials Research Society of India) Gold Medal (2011)
- Professor Manzoor Koyakutty is a recipient of the Marie Curie Award for research in Cancer Nanotechnology. He is now a Fellow of National Academy of Sciences.
- Associate Professor Deepthy Menon is a recipient of the DST BOYSCAST

Amrita Health Sciences Prospectus 2020

Fellowship from the Government of India for research in Characterization and Toxicity of Nanomaterials

- Professor R Jayakumar is a recipient of MRSI (Materials Research Society of India) Gold Medal. He was also recognized as the most cited scientist from 2014 to 2018 by Clarivate Analytics (Web of Science)
- Assistant Professor Sahadev Shankarappa is the recipient of the DBT Ramalingaswamy Fellowship in 2013
- Associate Professor Raja Biswas is the recipient of the DBT Ramalingaswamy Fellowship in 2009
- Dr Gopi Krishna is the recipient of the DST Inspire Fellow, 2014
- Assistant Professor Manitha Nair, is a recipient of the India Young Biotechnologist Award for her research in tissue engineering of Bone
- Assistant professor Dr Girish is a recipient of DST Inspire Fellowship in 2016.
- Dr Binulal Nelson Sathy, Assistant Professor, is Ramalingaswami re-entry fellowship recipient in 2017.
- PhD student, Ms. Prateeksha Menon, is a recipient of the Women's scientist Award from DST

Research Highlights and Research Initiatives at Amrita Institute of Medical Sciences

Amrita is the host institution of ACNSMM and ACNSMM serves as the research wing of Amrita. Amrita is one of the largest advanced clinical and research facilities in India with a 1300 bed super-specialty hospital and a 400 bed General Hospital along with a full spectrum of diagnostic labs and a Molecular Biology Lab. Amrita has Centre for Excellence in most major super-specialties.

Developing countries have been at the mercy of major pharmaceutical industries and research centres overseas for the transfer of biomedical technology and therapeutic agents. Recognising this fact, Amrita has taken very bold steps to inculcate a culture of research among the faculty and especially the student community. Amrita has initiated a pancreatic registry and a cancer registry with participation from hospitals all over India. Amrita has a strong clinical



research program with both investigator initiated research and clinical trials. Paediatric cardiology with the support of ICMR is a leading epidemiological research Centre in congenital heart defects. Amrita is also internationally famous for its Infection Control Program led by Dr Sanjeev Singh which has won accolades all over the world as a model program. Medical students are also active in research. A major accomplishment was the conferring of four out of five ICMR-studentship awards for the State of Kerala to the students of Amrita School of Medicine. ICMR studentship is an award given by the Indian Council of Medical Research to encourage deserving medical college students to take up short-duration research protocols - the objective being to inculcate a culture of research right from the undergraduate years.

The present areas of advanced clinical research at AIMS include: Molecular Biology, Molecular Medicine, Nano Medicine, Inborn Disorders of Metabolism, Bio-degradable Stent, Heart Muscle Disease, Tumour Immunology, Electrical Disorders of the Heart, Non Contact Mapping and RF Ablation studies, Atrial Fibrillation – Genesis and Management, Vulnerable Plaque Recognition and Management, Studies on Tropical Pancreatitis and Hepatitis B.

A sequencer and real-time PCR and thermal cyclers have been made available to enable provision of diagnostic genetics for common inherited diseases and also to aid in research. These will also be used for microbiological and HLA-related research in addition to population genetics. Expression of relevant genes in tumours will be evaluated by real-time PCR. A homograft bank with a cryopreservation facility will also be provided for better management of cardiovascular diseases .

Amrita will maintain cell lines, which will enhance the research activities in cell biology, molecular cytogenetics, immunology, biochemistry, molecular biology, mycoplasma and virus diagnostics. Particular emphasis will be placed on a program of extensive quality and identity control and on characterisation of the cell lines.

Amrita has been awarded with research protocols by funding agencies such as Department of Biotechnology (GOI), Department of Science and Technology

(GOI), Indian Council of Medical Research, and State Department of Science, Technology and Environment. Amrita is also a preferred destination for involving in multi centred international clinical studies. In the faculty of medical sciences, doctoral-level research facilities are available in certain areas of basic medical sciences and epidemiology. Given the competitive nature of research, our library provides ready access to current high-impact journals in all areas of biology and medicine with network computers. This will also be valuable for scientists and medical students in training.

Amrita has a Scientific Review Committee, an Institutional Ethics Committee and also an Institutional Animal Ethics Committee to critically review the research proposals. These committees have been constituted meeting statutory requirements.

Dr. Shantikumar Nair, Dean of Research and Dr. Prem Nair, Medical Director, Amrita Institute of Medical Sciences offer leadership to the research initiatives.



Amrita Hospital Information Systems

Amrita features one of the most advanced hospital computer networks in India, the Amrita Hospital Information Systems (AHIS). The hospital has computerised nearly every aspect of patient care, including all patient information, lab testing and radiological imaging. The hospital network supports more than 3000 computers and additional devices like printers, scanners, and other peripherals. Although the software was originally designed for use at the Amrita Institute of Medical Sciences, it has now become popular in other leading hospitals throughout India due to its ease of use and integration.

AMRITA HIS allows a holistic approach within and across clinical segments, delivering solutions with the innovation and synergy necessary to help move forward in today's changing healthcare environment. AMRITA HIS is probably the only Healthcare Solution available in the world which has been built largely based on Open Source technologies. The solution developed by Amrita Technologies addresses all the needs of the healthcare domain and provides a fully indigenous implementation, adopting best-of-the-breed technologies and design techniques. AHIS has been developed using Extreme Programming Methodologies backed by a vibrant and large community of Domain Experts. It is a fully integrated, highly configurable, platform independent Enterprise Information System which allows for scalability and performance, while at the same time ensuring to meet all the needs of a Healthcare Institution and much more. The system not only helps in daily patient care management, but also provides the foundation to foster research and development. AHIS is aided by user-friendly reports and ergonomic user-interface, and thereby ensuring maximum user efficiency.

The main focus area is on the integration of clinical applications with the financial and administrative applications.

The system allows for centralised access to all organisational and patient data through one single web interface for any authorised user. It manages all patient information from patient registration to discharge. It has many sub-modules which are very tightly and seamlessly integrated that cover the hospital transactions related to the patients.



HUMANITARIAN ACTIVITIES



The Mata Amritanandamayi Math (MAM) is a registered Public Charitable Trust dedicated to serving humanity without distinction of nationality, caste, race or religion. The Math's international headquarters, located at Amritapuri, (Kollam), Kerala, India, provides a global presence through its numerous philanthropic activities and institutions, which reflect Amma's message of love and compassion.

The United Nations (UN) announced the distinguished award of Special UN Consultative Status to Mata Amritanandamayi Math with the Economic and Social Council (ECOSOC) of the UN. After a thorough review of Mata Amritanandamayi Math's work and results for the past 15 years, including Amrita Institute of Medical Sciences (AIMS), Amrita University, and all other major efforts, the United Nations' 19 member nation committee within the ECOSOC Committee, voted unanimously to grant Special Consultative Status. The major ECOSOC body of 50 member nations affirmed this decision on July 21, 2005. The Math is among 726 Indian NGOs to receive formal UN affiliation in India as of 2018.



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