AMET

ACADEMY OF MARITIME EDUCATION AND TRAINING

DEEMED TO BE UNIVERSITY

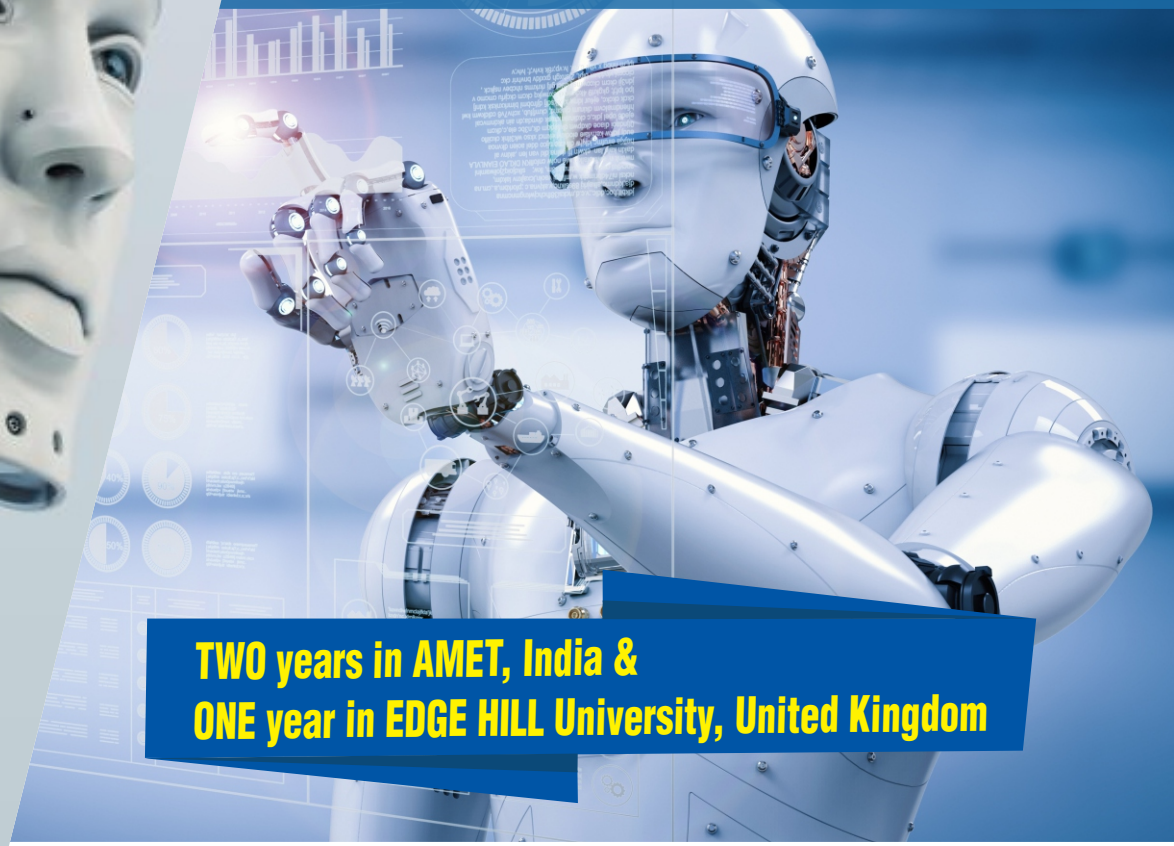
(Under Section 3 of UGC Act 1956)

Celebrating 25 Years

INFORMATION BROCHURE

B.Sc. (Hons)

Robotics and Artificial Intelligence - 3 Years



TWO years in AMET, India &
ONE year in EDGE HILL University, United Kingdom

Degree Awarded by

Edge Hill University

United Kingdom

B.Sc. (Hons) Degree in Robotics and Artificial Intelligence

Programme Outline

Programme Duration	3 Years (Full-Time) - 6 Semesters
Programme Nature	Twinning Programme
Start Date	July 2019
Department	Department of Electrical and Electronics Engineering, AMET University, India Department of Computer Science, EDGE HILL University, UK
Location	First Two years in AMET University, India & Third year in EDGE HILL University, United Kingdom
Degree Offered by	EDGE Hill University, United Kingdom

Why should one choose this Programme?

The rise in the applications of Robotics and Artificial Intelligence (AI) field powered by the rise in computer processing power. The areas related to data management is undergoing transformation due to application of novel techniques such as Machine Learning and Deep Learning. There is a huge paradigm shift towards adopting robotics and AI in many industries.

AI, robotics, and automation have gained a rapidly expanding foothold in the workplace, faster than many organizations ever expected. While organizations are increasingly using these technologies to automate existing processes, true pioneers are radically rethinking on work architecture to maximize the value of both humans and machines - creating new opportunities to organize the work more effectively and to redefine the human workforce's skills and careers.

The traditional 'Intelligent Robots' have transitioned from being the stalwarts of industrial shop floors! They now assume the roles of personal assistants, entertainers, delivery vehicles, surgical assistants, assistants to doctors for medical diagnoses, driverless vehicles, and unmanned aerial vehicles (UAVs) and ships. Interesting applications like chatbots, humanoids, robotic pets, robotics news readers have now started appearing in a variety of industries. Robotics and Artificial Intelligence is being an inter-disciplinary, this programme binds together these two areas, and offers conceptual foundation in intelligent systems.

Robotics and AI is a fascinating and challenging field of study with excellent employment opportunities. This is predicted to be one of the most wanted skills in the near-term future!. This BSc programme in Robotics and Artificial Intelligence will offer graduates with an excellent platform to enable the students enter into a wide range of challenging sectors such as Automotive Industries, Finance, Engineering, IT, Manufacturing & Production, Transport & Logistics, Defence, Healthcare, Entertainment and Science. The future is here and we can almost hear and see it! Robotics and Artificial intelligence! New jobs with titles such as “bot trainer,” “bot farmer,” and “bot curator” are increasingly heard in the marketplace! Manufacturers are finding ways to use collaborative robots, or “co-bots,” that work side by side with workers in factories.

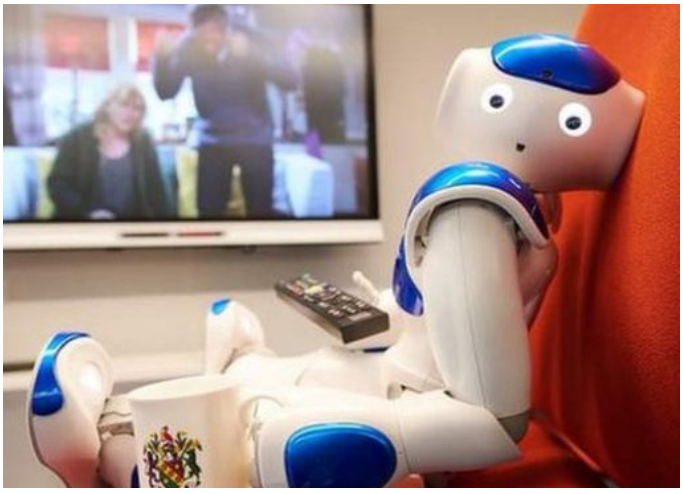
Why study at AMET & EDGE HILL?

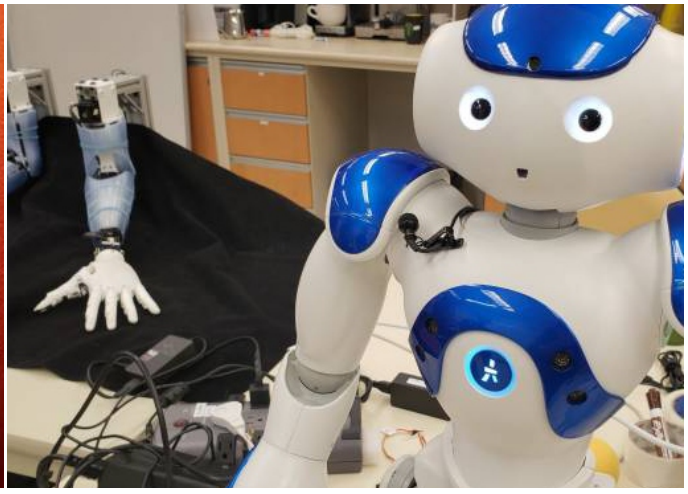
Academy of Maritime Education and Training (AMET), a Deemed to be University from India and EDGE HILL University from United Kingdom are two premier Institutions involved in imparting quality education and capacity building of human resources. The aim is to create industry ready professionals to meet the demands of the emerging industries. EDGE HILL University provides world-class facilities and resources supporting International students. The Department of Computer Science of EDGE HILL University is based on the state-of-the-art £13m Technology Hub. This purpose-built development offers highly contemporary suites of outstanding facilities for students. Modern computer laboratories are equipped with high-specification computers, high-resolution screens and the latest hardware and software.

B.Sc. (Hons) programme in Robotics and Artificial Intelligence, is intended to be a 'Twinning programme', has been drafted and designed by experienced academicians from both Institutions, who have deep involvement in research. Between AMET and EDGE HILL University, there is a wide pool experience of academicians and industry experts. The programme team from both Institutions are specialists in computing and active researchers in areas including artificial intelligence, machine learning, intelligent systems, robotics and mechatronics. This team will be involved in transferring their knowledge, skills and attitudes to the students. The programme will provide opportunities to students to work with the industry on some modules. This will hone their theoretical foundation and enrich with enhanced real-life experience.

The first two years the students will be studying at AMET, Chennai which will help them in establishing a strong foundation towards a successful career. During the first two years, the student will undertake foundation modules in Mathematics, Physics, Communication Skills, and choices from a range of courses such as Computer Science, Mechanical, Electrical and Electronic technologies through a 'blended learning' approach using a strong platform on Information and Communication (ICT).

During the third year, courses on core areas such as robotics and artificial intelligence will be facilitated with laboratory practice, industry visits. Expertise and industry immersion will be provided at EDGE HILLS University. Upon completion of the credits required, degree will be offered by the EDGE HILLS University, United Kingdom.





Career Prospects

The Deloitte "Global Human Capital Trends survey" 2018 report mentions the following human skills needed to use Robotics and AI effectively: Technical skills, Complex problem-solving skills, Cognitive abilities, Process skills, Resource management skills, Social skills, Content skills, Sensory abilities, Psychomotor abilities and Physical abilities.

Robotics and AI are the recent emerging technologies. They have created a demand for new type of skills. The problem identification, analysis, modelling, solution development and evaluation skills gained from this programme will prepare the students for a range of careers. Students will be exposed to industry practices through industry visits, internship and also their final year projects in reputed industries. The students will also be encouraged to take part in National and International events, which will help to grid with external stakeholders.

The most common fields, where employment can be found, will be in industries developing robotic solutions for agriculture, human resource management, manufacturing, healthcare, transport, energy, defence, research, etc.
Upon completion of the programme, Graduates could take roles such as:

- Robotic Design specialist
- Software engineer/developer
- Embedded Systems developer
- Intelligent Systems architect
- Intelligence analyst in a range of sectors such as Finance and Marketing, Industry 4.0 etc.
- Further study (Masters courses, PhD research)

Eligibility Criteria

Age : Minimum 17 Years

Eligibility : Pass in Plus 2 (12th Standard) or its equivalent with Mathematics, Physics and Chemistry.

Mode of Selection : AMET Common Entrance Test

Admission Process

(i) Register and Apply:Interested candidates can apply online/offline with required information
(ii) Selection: Entrance Examination - AMETJEE will be conducted on Aptitude, Mathematics, Physics and Chemistry. Shortlisting of candidates will be based on the rank obtained in AMETJEE
(iii) Final Selection: Candidates are selected based on their performance in 10, +2, AMETJEE, University level Counselling, involvement in extra-curricular activities, and a statement of purpose.

Curriculum Structure

Mathematics and Physics are the foundation science courses. The course is designed to aid problem solving, modelling and simulation during their project work. Robotics and AI is a blend of basic engineering courses such as Electrical and Electron Devices, Control system, Mechatronics and Software platforms that are focused throughout the three years of study.

Foundations in Robotics and Artificial Intelligence recognises exciting innovations which are being built increasingly to automate our world. The courses on robotics and artificial intelligence have roots in the work of Alan Turing investigating the boundary between human intelligence and computers. These courses examine how artificial intelligence techniques and principles from biological

systems can be applied to robots to control behaviour and sense environments. The student will develop an understanding of the theoretical problems, for example behaviour and basics of learning techniques, inherent in robotics and use pre-built robots to design, implement and test different control and perceptual systems. Student will develop expertise in various aspects of robotic programming, including using multi-sensors to collect environmental measurements, designing control strategies and making smart decisions by finding optimal solutions.

Algorithms in Intelligent systems course covers the algorithms used in intelligent system that simulates a certain form of human reasoning, knowledge and key aspects of data analysis. The latest developments in established and emerging areas will be covered in-depth, from bio-inspired computing to adaptive intelligence. Programming Robots with ROS enables to quickly build robotic applications under Robot Operating System (ROS) through access to a large set of open-source software and tools. It helps to easily add perception and navigation abilities to the robots designed and integrate our own sensors, actuators, software libraries, and even a whole robot into the ROS.

How will I study?

The programme is delivered through a combination of classroom lectures, student-led seminars, workshops, tutorials, hands-on practical and Technology Enabled Learning (TEL). Classes are highly interactive, with the practical application of concepts with a key factor of a case studies drawn from real-life.

How will I be assessed?

A variety of assessment methods will be used on this degree including formal examinations, lab practical and project report. Continuous assessment are carried out to have 40% weightage in the total marks of each course and 60% weightage is given to end semester examination and each course is assessed for a total of 100 marks. Continuous assessment considers module wise tests, model exam, assignments/tutorials and attendance.

Study Environment

The Departments of both Institutions are equipped with the state-of-the-art laboratories and smart classrooms. Computer laboratories have the cutting-edge technology hardware and software. The campus and the hostel are Wi-Fi-enabled. The central library enriches the learners with resources in printed as well as digital forms. Learning resources include robots and a robotics simulator, graphics software, web development tools, software development environments, smart teaching boards, and other software platforms for implementing and testing artificial intelligence algorithms. The departments have strong links with industry and the curriculum is kept current to meet the demands of industry for placing the students. Supported with various cells and clubs, the students can shape their profile by voluntary participating in co-curricular and extracurricular activities.

Scholarships

EDGE HILL University offers a range of scholarships with a competitive application process for prospective full-time undergraduate students. These scholarships are not linked to academic success and celebrate determination, talent and achievement beyond course work, for instance in creativity, enterprise, ICT, performance, sport or volunteering.

EDGE HILL UNIVERSITY CAMPUS

UNIVERSITY AN OVERVIEW

EDGE HILL University, a160-acrebeautiful campus is sited in the historic town of Ormskirk, North West England surrounded with greeneries, lakes, modern and historic academic buildings. Ormskirk is connected with train and bus routes to travel across the UK. The North West of England offers a diverse population and international appeal from the cities of Liverpool and Manchester with their shopping, culture, sporting heritage and vibrant nightlife to the beautiful countryside of the Lake District, Sefton coastline and North Wales. International airports in both Liverpool and Manchester provide a gateway to the rest of Europe.

EDGE HILL University has achieved Gold, the highest rating in the National Teaching Excellence Framework (TEF), for delivering consistently outstanding teaching, learning and outcomes for its student. Global Teaching Excellence Spotlight Award has been received for the quality of support and engagement infrastructure to the students. Shortlisted for University of the Year in the WhatUni Student Choice Awards 2019 for its outstanding achievements in student support, graduate employment and innovation, as well as its significant role in transforming lives. The University also received Best Student Accommodation in the UK and Ireland and Best Value for Money, National Student Housing Awards 2018. It is recognized as the University of the Year for Student Retention 2018.

Robotics Lab

Department of Computer Science

FACILITIES AND RESOURCES

- 24/7 library access during term time
- £30 million sports complex
- 24/7 access to computer suites
- Arts Centre for year-round programme of performance, music and cinema

ACCOMMODATION

- 24-hour security
- high speed Wi-Fi enabled Room


Library

SCHOLARSHIPS

EDGE HILL University has a range of scholarships on offer to international students. All full fee-paying international students applying for a course lasting at least one academic year will be considered for a scholarship. You can only hold one scholarship at any one time and all scholarship awards are made at the discretion of Edge Hill University.

SCHOLARSHIP NAME	AMOUNT AWARDED
International Foundation Scholarship	Up to £1,200
Undergraduate Development Scholarship	Up to £1,200
International Achievement Scholarship	Up to £2,000

ENGLISH LANGUAGE REQUIREMENTS

For those students whose native language is not English, they will need to provide evidence from either one of the following.

- Secure English Language Test (SELT)
- Trinity College London Integrated Skills in English (ISE)
- Pearson Test of Academic English (PTE)
- Cambridge English Advanced(CAE)
- Cambridge English Proficiency (CPE)
- Internet- based TOEFL (iBT)

If the current level of English is lower than the minimum requirement, the students may still be offered a place on the course they have applied for with full attendance on our Pre-Sessional English Course.

Pre-Sessional English Language 8 weeks, full-time

The Language Centre at Edge Hill University offers an 8 week Pre-sessional English Language course. This is an ideal programme of study if you need to improve your academic skills, focus on your target discipline and raise your overall English Language.

Our IELTS requirements are as follows:

International Foundation Programme	5.0 with no element below 4.0
Undergraduate Programme	6.0 with no element below 5.5

AMET UNIVERSITY CAMPUS

UNIVERSITY AN OVERVIEW

AMET, located at Kanathur, just half an hour drive from Chennai, on the breezy shore of the Bay of Bengal, is a state-of-the-art University devoted to imparting Maritime knowledge and training to cadets and students.

Established as a Private Maritime Institute through AMET Trust with just 14 cadets in 1993. AMET has, through its uncompromising strides of excellence and ambitious zeal to serve the students and nation, morphed into the first University for Maritime education in India with proud strength of over 3000 students enrolled in different intensively maritime and marine related UG and PG programmes. Now, AMET-trained Seamen sail proudly throughout the world spreading its popularity and quality training made possible through our excellent academic and professional strengths.

The proof of our quality lies in the various graduates from our School of Maritime Studies, School of Engineering & Technology, School of Science & Humanities and School of Management Studies occupying important positions in industrial houses throughout the world.

Academic

- Creatively integrated Maritime Curriculum meeting the physical, intellectual and professional needs of the cadets and the students.
- Maritime Courses like Marine Engineering, Nautical Science, Pre Sea Training for Graduate Mechanical Engineers have found favour with our cadets interested in a career with the Merchant Navy.
- Maritime related courses such as Naval Architecture and Offshore Engineering, Petroleum Engineering, Mechanical Engineering etc., have been designed keeping in mind industry requirements.
- Management Programmes such as Shipping & Logistics, Oil & Gas Management are tailor made to address

emerging issues in this dynamic sector.

- Qualified, experienced and committed academic faculties.
- Teaching through advanced technological aids.
- Uncompromising, quality-ensuring & student-friendly autonomous evaluation system headed by a Controller of Examinations.

Infrastructure

- LCD and OHP supported smart classrooms, resourced labs and ambient technical workshops.
- Providing the second best experience of 'seeing before sailing' through sophisticated Ship Simulator, Ship Replica (AMET Jewel) and Swimming Pool crisis - rehearsals.
- A state of the art TRIBON Software lab and DNV Sesam Software for Naval Architecture Students.
- A spacious hostel with national and international cuisines.
- Gymnasium furnished with international fitness equipments and supplemented with qualified trainers.
- Medical Care and Recreational facilities.
- High speed Wi-Fi Internet connection on the campus.
- A well equipped digitalized open accessed library with plenty of books and international maritime journals and newspapers and a help-desk manned by ready-to-help librarians.
- Robotics lab available

Discipline

- Zero tolerance against ragging.
- Student counseling – the 'mentor' system with the qualified counsellors.

Extracurricular Activities

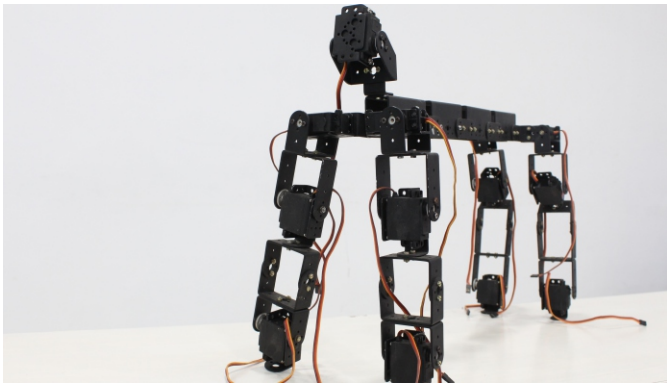
- Professional sports and recreational activities efficiently managed by well qualified physical directors.
- Inspiring patronage of to bring out the creativity, latent talents and histrionic skills of the students.

Placement

- Generating 100% placement from global shipping giants, shipyards, ports, dredging companies etc.
- AMET routine of Job on Joining (JJ)
- Students' employability – enhancement through communication-enrichment effectively done by English and Soft Skills Departments.
- International certification encouraged – IELTS training offered on campus

Invitation to become AMETians

- With the sensitive and caring management, dedicated faculty and staff, consistent infrastructural upgrading and its relentless commitment to professional excellence, students' reservation and Maritime Research and Publications, AMET is fast evolving as a resource center for Maritime education and training. AMET offers an exciting “Pre Sea training".
- Skill Development is mandatory to join the course and obtain degree. To make the students employable academically, physically and morally to earn a degree from capable, value added Programmes like Communication Skills, Internship, Physical Education (Yoga & Meditation) and foreign language courses.
- Join AMET. We will take care of you and your future.



RECOGNITION

AMET was recognized by Directorate General of Shipping (DG Shipping) in the year 1993 for offering Marine Engineering, Nautical Science, GME, and ETO Courses.

AMET was conferred with Deemed to be University Status under De Novo category on August 2007 by University Grants Commission under Sec.3 of UGC Act, 1956.

All the Technical Courses offered at AMET are approved by All India Council for Technical Education, New Delhi

The National Assessment and Accreditation Council (NAAC) an autonomous institution of the University Grants Commission assessed AMET and Accredited during November 2015. (The accreditation is an indication of standards of quality set by the NAAC and valid for a period of five years from 16-11-2015).

AMET is certified to ISO 9001:2015 QMS Standard by Det Norske Veritas for Design, Development and Conducting Maritime Training Courses, Programmes, Examinations and Assessments.

Det Norske Veritas- Germanischer Lloyds (DNV-GL) world renowned Classification society bestowed the highest **Grade A1 (Outstanding)** to AMET continuously for FIVE years after Comprehensive Inspection Programme (CIP) conducted under the authority of Directorate General of Shipping, Government of India.

ACCREDITATION

Accreditation by approving agencies is a stamp of quality. AMET in pursuit of uncompromising quality in every endeavor has obtained accreditation from various agencies such as CRISIL, RINA (Royal Institute of Naval Architects), WMU (World Maritime University) Sweden.

Directorate General of Shipping, Govt. of India is conducting accreditation/grading process through Det Norske Veritas - Germanischer Lloyds (DNV-GL) for all the Institutions of Maritime Education in India. Det Norske Veritas - Germanischer Lloyds (DNV-GL) world renowned Classification society bestowed the highest Grade A1 (Outstanding) to AMET after Comprehensive Inspection Programme (CIP) conducted under the authority of Directorate General of Shipping, Government of India, Mumbai.

Royal Institution of Naval Architects (RINA) is a world renowned and highly respected international professional institution and learned society whose members are involved at all levels in the design, construction, maintenance and operation of all marine vessels and structures. RINA has members in over ninety countries, and is widely represented in industry, universities and colleges, and maritime organizations world-wide. The Naval Architecture program at AMET has the distinction of obtaining accreditation with the highest rating by RINA.

Credit Rating and Information Services India Limited (CRISIL) is a global analytical company providing ratings, research, and risk and policy advisory services. CRISIL has awarded the highest rating for the Maritime courses held by AMET. We also get the highest appreciation by CRISIL every year.

AMET's quality training and professionalism has been recognized in the form of Awards and Agreements like Sailor Today Training Award, Seatrade Asia Awards etc...

Collaboration with Various Global Maritime Institutions and Universities, strong and goal oriented industry institute-interface and increasing international student's enrollment lend an additional impetus and vibrancy to the already robust AMET. Recently AMET has signed a Memorandum of Understanding with World Maritime University, Sweden and Danish Maritime University etc.

The quality and standards of all programs conducted at AMET are certified on the basis of inspection carried out under ISO 9001:2015 by DNV.

FEE STRUCTURE OF BSc (Hons) Degree in ROBOTICS AND ARTIFICIAL INTELLIGENCE 2019-2022 (3 Years)
II YEARS IN AMET, I YEAR IN UK

COURSE FEE DETAILS	I			II			III	
	I	II	III	I	II	III	Edge Hill Fee	
	July'2019	Nov'2019	Mar'2020	July'2020	Nov'2020	Mar'2021		
Tuition Fee	97000	90000	85000	97000	90000	85000	10800 POUNDS	
Library Fee	5000		5000	5000		5000		
Soft Skills Training Fee		5000			5000			
Uniform Fee (To be paid as separate DD)	3000			3000			Optional Fees	Per Week
Text Books Fee (To be paid as separate DD)	5000		5000	5000		5000		
Term Fee	**110000**	**95000**	**95000**	**110000**	**95000**	**95000**		
Annual Fee	**300000**			**300000**			Living Expenses(only for VISA Purpose)	

Note :

- Caution Deposit (Refundable) Rs 10000/- to be paid along with I Year I term fee
- Examination Fee has to be paid every Semester separately
- IELTS Training Fee has to be paid separately, if opted from University
- DD in favour of "AMET UNIVERSITY, PAYABLE AT CHENNAI"

Recognition as a Leader in Maritime Education

*"Lifetime Achievement Award 2017" presented by **Shri NitinGadkari**, Hon'ble Minister of Road Transport and Highways, Shipping and Water Resources, River Development and Ganga Rejuvenation, Government of India to the **Chancellor Dr. J. Ramachandran**, AMET for his **meritorious** and **exemplary** contributions to the global Shipping Industry on the occasion of World Shipping Forum 2017 Convention conducted by the Institute of Marine Engineers (India), Chennai Chapter on 23rd November 2017*