

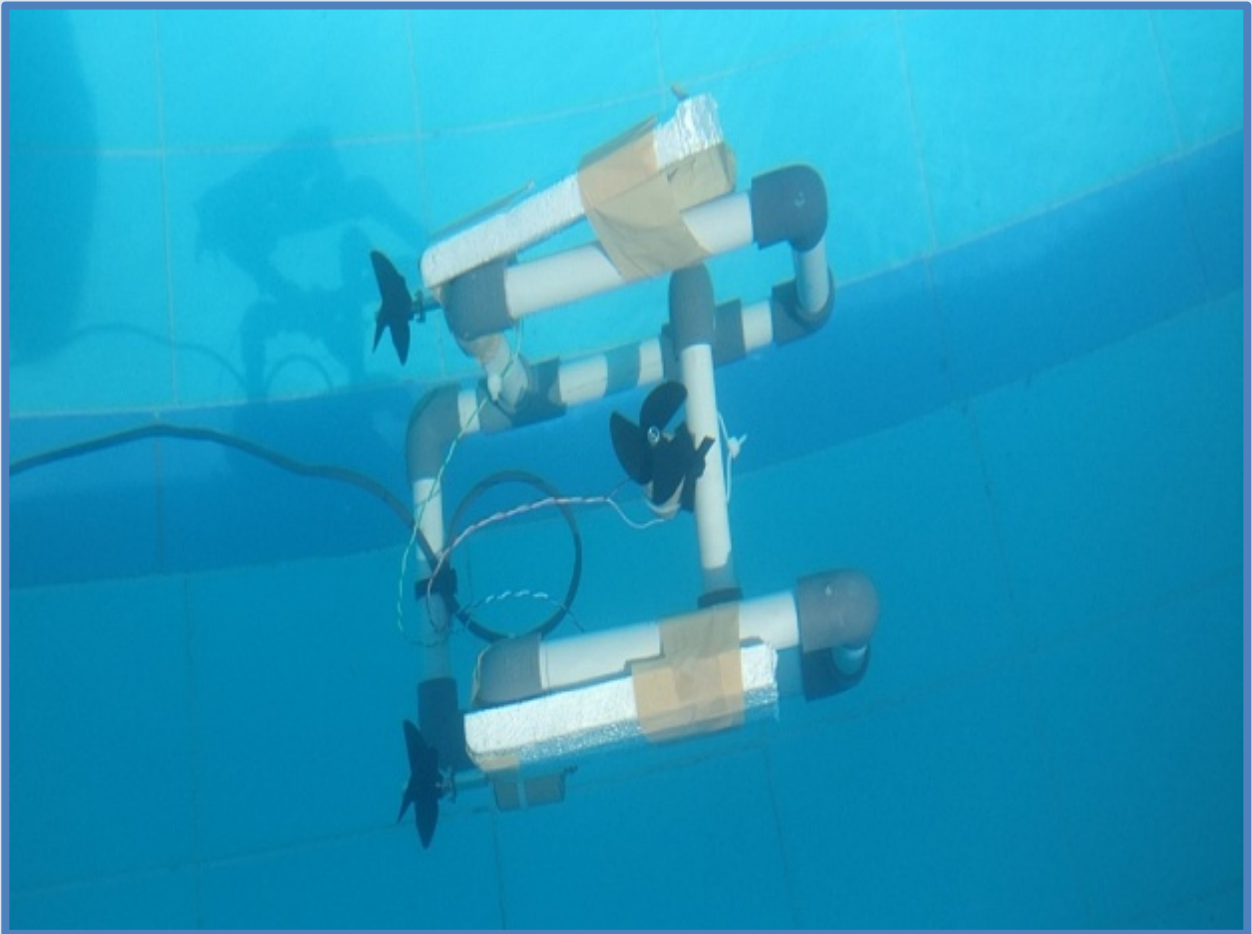


AMET

ACADEMY OF MARITIME EDUCATION AND TRAINING

Deemed to be University Under Section 3 of UGC Act 1956

KNOTS 202 2



2022-2023

Even Semester Magazine

AMET DEEMED TO BE UNIVERSITY, CHENNAI – 603112.

EDITORIAL

Dear Readers,

I am pleased to know that this issue of AMET university NA&OE department magazine “NAVAMET” is being published. The NAOE department is an abode of excellence for ship hydrodynamics and Ship Structures in the AMET University. Students are made familiar with the latest theoretical developments in their respective engineering disciplines.

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Editor-in-Chief

Prof. MSP Raju, Head,

Department of Naval Architecture & Offshore Engineering,
AMET Deemed to be University

Associate Editor

Dr. M. Subha, Director,

Centre for Internal Publications, AMET Deemed to be University.

Editor

Dr. Lilly R,

Assistant Professor, AMET Deemed to be University.

Editorial Advisors

Dr. B.M .Shameem

Dr. P. Sivabalan

Published By

Department of Naval Architecture & Offshore Engineering & Centre for Internal Publications

*Owned by Academy of Maritime Education
and Training (AMET)*

*135, East Coast Road, Kanathur-603112,
India, Phone: 044-27472155.*

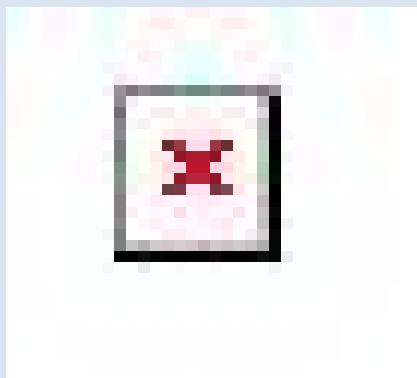
Email: m.sp.raju@ametuniv.ac.in

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FOREWORD

Prof. MSP Raju, Head, Department of Naval Architecture & Offshore
Engineering



The Department of Naval Architecture & Offshore Engineering started functioning in AMET University from the year 2007 keeping in view to meet the national need of qualified and trained manpower in the field of Naval Architecture and Offshore Technology. The department is offering a degree programme at bachelor, masters and doctoral levels.

The fundamental aspects of design, construction, repairs and conversion technology of ships and other marine structures are imparted to the students. They are also exposed to the high-end relevant topics of finite element methods, quality assessment, and control, use of various software required by the practising engineers of the field. The Department is also having a collaboration with the Department of Naval Architecture & Ocean Engineering of the University of Strathclyde, Glasgow UK for academic exchange of students and joint research programme.

The students are encouraged to take up challenging projects and to participate in extra-academic activities for overall development. The aim is to make a Naval Architect who can take up the challenges and shoulder the responsibilities as demanded. We highly value our association with industries, alumni, and well-wishers of AMET University.

Best Wishes!

PREAMBLE

AMET is India's first Deemed to be University in Maritime Education which is ranked as 3rd among Maritime Universities of the World in the PIMET (Performance Indicators in Maritime Education and Training) Ranking of International Association of Maritime Universities (IAMU). Established during 1993, AMET's uncompromising strides of excellence in the field of maritime education and training laced with its capacity to feed the global shipping industry with an unrivalled maritime human resource secured it to have many national and international recognitions, accreditations and rankings such as NAAC, NIRF, ARIIA, DGS-CIP, PIMET etc.

AMET serves as an ocean of knowledge for over 4000 students pursuing Programmes ranging from diploma to Doctoral programs through 9 schools and 23 intensive research and training centres for marine and marine related activities. Equipped with an excellent infrastructure for research and development, co-curricular and extracurricular activities AMET secured its compliance certificate for ISO 9001:2015 QMS standards from the prestigious and globally renowned DET NORSKE VERITAS, Norway.

For over two decades AMET is remaining as the favorite destination for campus interviews by many shipping giants such as AP MOLLER MAERSK, GOODWOOD, NYK, SONANGOL, VSHIPS, WALLEMS, SHELL, CHEVRON, STENA and so goes a list of over 100 companies. Besides positions onboard, AMET Business school graduates have secured lucrative jobs in commercial shipping sectors such as chartering and ship broking. Never the less, Naval architecture, petroleum engineering, harbour engineering, marine electrical and electronics engineering graduates have successfully walked away from AMET with jobs offering sumptuous packages along with an opportunity to grow and glow in their career swiftly. Needless to say, about the entrepreneurship development activities nurtured into AMET'ians has been found rewarding by students who are chief executive officers of their own organization.

VISION AND MISSION OF THE UNIVERSITY

VISION

To sustain identity as a World Class Leader in Maritime Education and empower learners with wholesome knowledge through progressive innovation in training, research and development which will render students a unique learning experience and a transformation impact on the Global Society.

MISSION

AMET will strive continuously to

- ❖ Impart value-based higher education and technical knowledge with uncompromising strides of an outstanding quality.
- ❖ Emerge as a Centre of Excellence inculcating skill development in recent technologies in accordance with industrial trends.
- ❖ Create World class research capabilities on par with the finest in the world and broaden student's horizons beyond classroom education.
- ❖ Nurture talent and entrepreneurship to enable all round personality development among students.
- ❖ Empower students across socio economic strata
- ❖ Make a positive difference to society through technical education.

QUALITY POLICY

AMET is committed to provide the highest quality in education and be the most preferred institution for pursuing marine and marine-related courses.

This will be achieved by a consistent focus on:

- Providing a conducive, vibrant, progressive and enriching learning atmosphere.
- Teaching excellence and research output.
- Global outlook and engaging with the world through learning, teaching and research.
- Providing competitive advantage in gaining employment for further academic opportunities.
- Maintaining excellent links with commerce and industry in both national and international.
- Complying with all applicable requirements and continually improving the effectiveness of the Quality Management System.

Department of Naval Architecture & Offshore Engineering

Vision of the Department

Our aim is to bring in education and research of highest International standards to bring the young minds academically intelligent, technically creative, ethically sound, emotionally strong and valuable to society.

Mission of the Department

- The Department is committed to impart high quality education and research in maritime sector.
- The Department is focused on adopting the method of “learn by practice” that help the students to apply the knowledge on innovations.
- The Department is committed to improve the analytical and numerical skill of the students to enrich them in innovation and research.
- To undertake various projects to support the design and research activities helping the graduates in career development and higher studies.

- To create the world class research capabilities in the fields of Naval architecture and offshore engineering.
- To make a positive difference to the discipline of Naval architecture through hands-on based education.

Academic Programs

1. Doctorate Programme leading to Ph. D degree
2. Master's Programme of 2 years leading to M.E. Naval Architecture and Offshore Engineering degree
3. Bachelor's Programme of 4 years leading to B.E. Naval Architecture and Offshore Engineering degree

Software Training

Students are given software training with the marine related software which enable us to understand the ship design aspects in-depth and also helps them to deliver their best while working in the industry.



1. AUTOCAD - Design drawings on computer
2. MAXSURF - Vessel Hull Design, Naval Architecture Software
3. Star CCM+ - CFD Software
4. DNV SESAM (GeniE) - Design and Analysis of Offshore Platforms (Fixed and Floating), Mooring and Riser Analysis.
5. SSI Ship Constructor - Vessel Hull Design, Outfitting Design, Naval Architecture Software
6. Python Programming

AWARDS AND RECOGNITIONS



Dr.R.Lilly, Assistant Professor, Department of Naval Architecture & Offshore Engineering has received Best Researcher National Award by IRDP Group of Journals, Chennai, India.

STUDENTS ACHIEVEMENTS

- ❖ The students of Naval Architecture and Offshore Engineering Chandana Saran Venkata Amarnath swamy and Sanjana J.T have participated in Anveshan 2021-22-National Student Research Convention March 27 &28,2022 on the theme of Basic sciences.They have presented the paper titled “Ship Hull form Optimization using data compression”



- ❖ The students of Naval Architecture and Offshore Engineering Chandana Saran Venkata Amarnath swamy and Sanjana J.T(III year),Mohamed Arham and Anoop George(II year) have participated in Internal Hackathon 2022-National Student Research Convention March 23,2022 .

DEPARTMENT TECHNICAL SYMPOSIUM

KNOTS 2022

DATE & VENUE - MAY 20, 2022



Department of Naval Architecture and Offshore Engineering, Academy of Maritime Education and Training (AMET), deemed to be University under Section 3 of UGC Act organised the National Level Technical Symposium KNOTS 2022 on May 20,2022 . The chief guest was Dr. G.A Ramadass, Director, National Institute of Technology (i.e, NIOT), and the Guest of Honor was Mr. G. Natarajan, Regional Manager, Indian Register of Shipping (i.e., IRS), South Coast of India. The technical symposium covered various events like 1.Technical Paper Presentation 2.Technical Poster Presentation 3.Tech Explorer – DIT working Models 4.Udyat – The Business Ideas 5.Ablaze – Radiate the writing skills 6.Techno Quiz on various science and technical topics including the general knowledge.



INTERNATIONAL SEMINAR

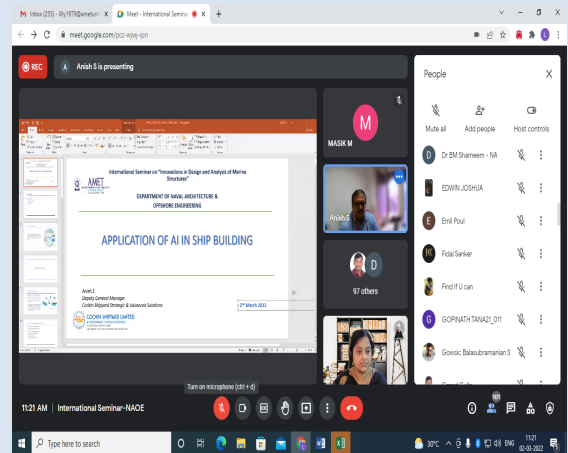
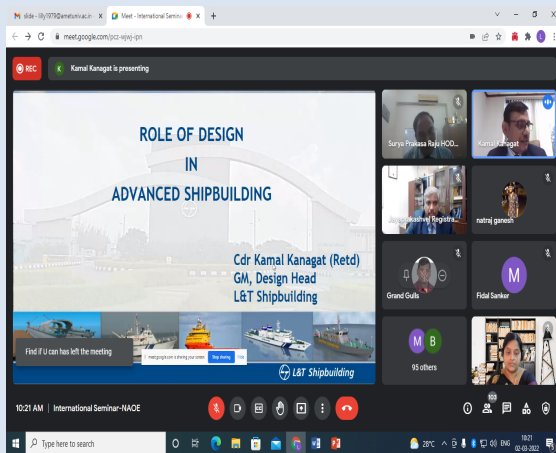
INNOVATIONS IN DESIGN AND ANALYSIS OF MARINE STRUCTURES

TIMINGS – 10.00 AM TO 4.00 PM

DATE & VENUE - MARCH 2, 2022 & ONLINE MODE

The International seminar conducted in the department via online mode with the Resource persons

- Mr.Sudhanshu, University of Delaware, USA.
- Mr.Anish.S, DGM, Cochin ship yard Ltd.
- Dr.Savin Viswanath k, Norwegian University of science and Technology (NTNU), Norway.
- Mr.Vinod Vincent, Project Manager, Helmsmar Design and Engineering Solutions, Cochin.



The main theme of this seminar is about

- Role of Design in Advanced Ship Building
- Application of AI in ship building
- Study of the See-keeping non-linearities through the weak scatterer approximation of the potential flow theory
- Dynamic Simulation of Ocean Engineering Systems
- Applications of data science in Naval Architecture

INTERNATIONAL HAPPINESS DAY

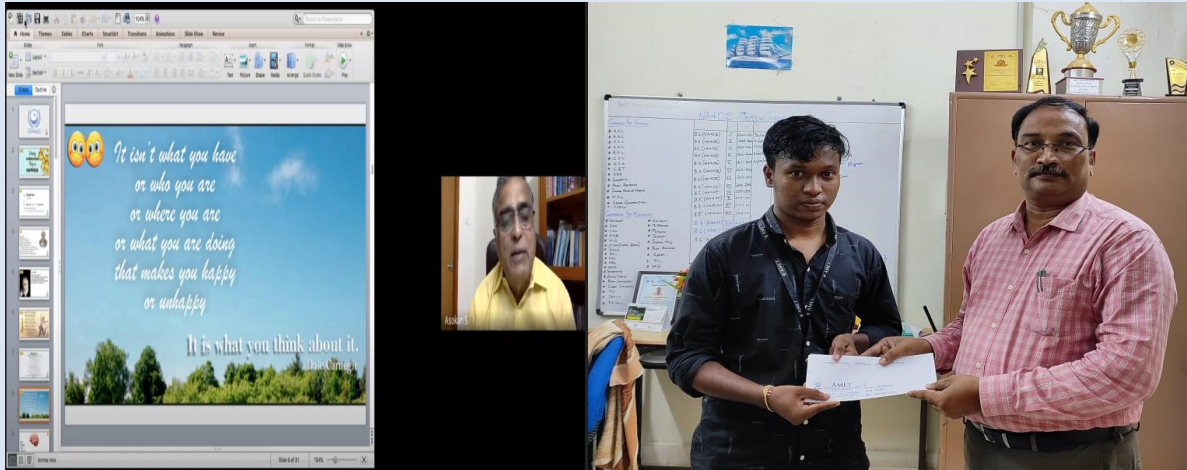
DATE & VENUE - MARCH 20, 2022 & ONLINE MODE

TIMINGS – 11.00 AM TO 12.00 PM

**Resource Person-Dr.S.Asokan,M S (General Surgery),Director CEO,GEM
Hospital, Chennai.**



Dr.S.Asokan inspired the students by talking about the ill effects of depression and stress. He has clearly explained about the benefits of being with positive attitude and facing the problems in life. He explained clearly how chemically brain gets benefitted because of happiness.



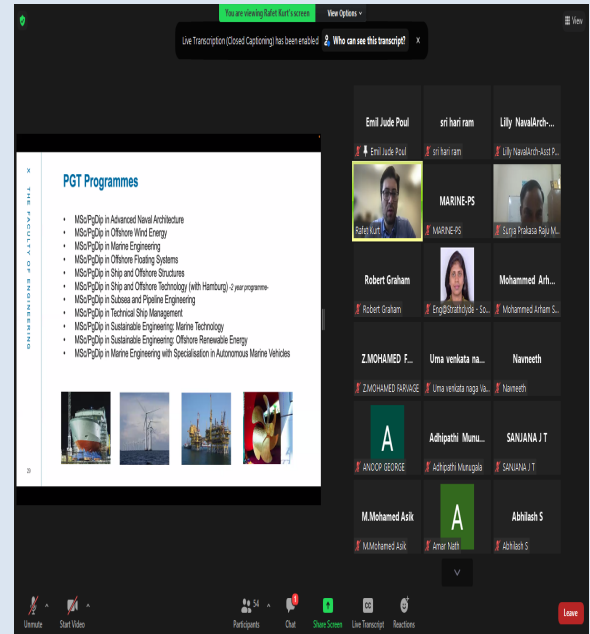
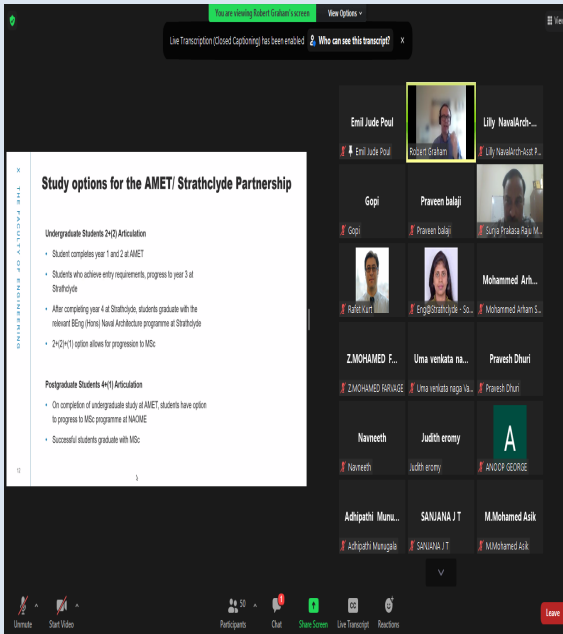
WEBINAR

PROMOTION EVENT ON “HIGHER STUDIES IN UNIVERSITY OF STRATHCLYDE”

DATE & VENUE - MARCH 11, 2022 & ONLINE MODE

TIME -3.00 PM TO 4.00 PM

Dr Rafet Kurt, explained about the University Infrastructure, Hostel facilities, Educational loans and Job opportunities. Mr Robert Graham said that they are providing concession in the fee structures under various criteria and also he explained about the placement details and laboratory facilities in the University of Strathclyde. Mr Robert Graham, clearly explained about their university curriculum and syllabus. They interacted with the students for their interest towards Strathclyde University. All the students of Naval Architecture and Offshore Engineering have got benefitted with this programme.



INDUSTRIAL VISIT

- ❖ The second year students of Naval Architecture and Offshore Engineering have gone for Industrial Visit to Fishing Harbour, Kasimedu on April 30, 2022 to gain knowledge in the area of
 - Design of Fishing Vessels.
 - Machineries used in Fishing Vessels
 - Procedures for filling the Ice and Fishes inside the holds
 - The various operational procedures while catching fish and containing them in holds.



- ❖ The Third year students of Naval Architecture and Offshore Engineering have gone for Industrial Visit to National Institute of Ocean Technology on May 2, 2022 to gain knowledge in the area of
 - Buoy system.
 - Ocean acoustics system.
 - Procedures for the Vessel Management.
 - Operational procedures in the submarine system

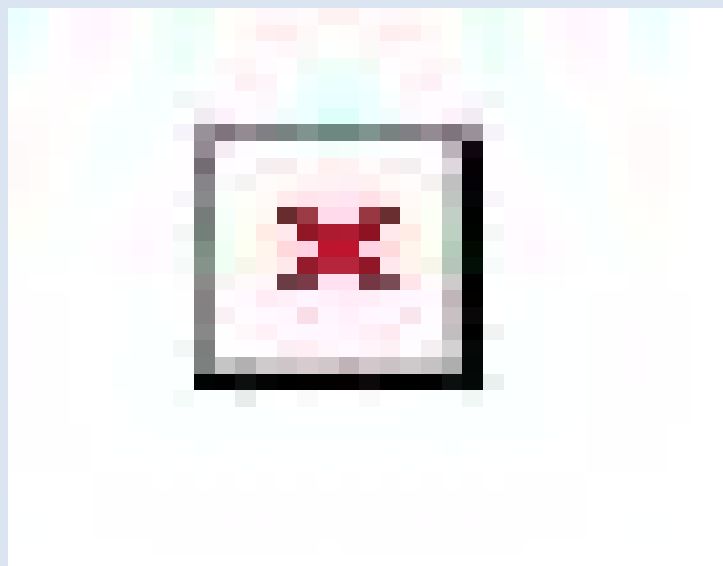


ALUMNI GUEST LECTURE

GREEN SHIP RECYCLING

DATE - FEBRUARY 25th, 2022

TIMINGS – 1.00 PM -2.00 PM



Alumni Guest lecture on “Green Ship Recycling” was conducted by the Naval Architecture and Offshore Engineering department on February 25, 2022 given by Mr. P.Sriram Krishnan(Batch -6). He has explained about the recent trends in Green Ship Recycling.



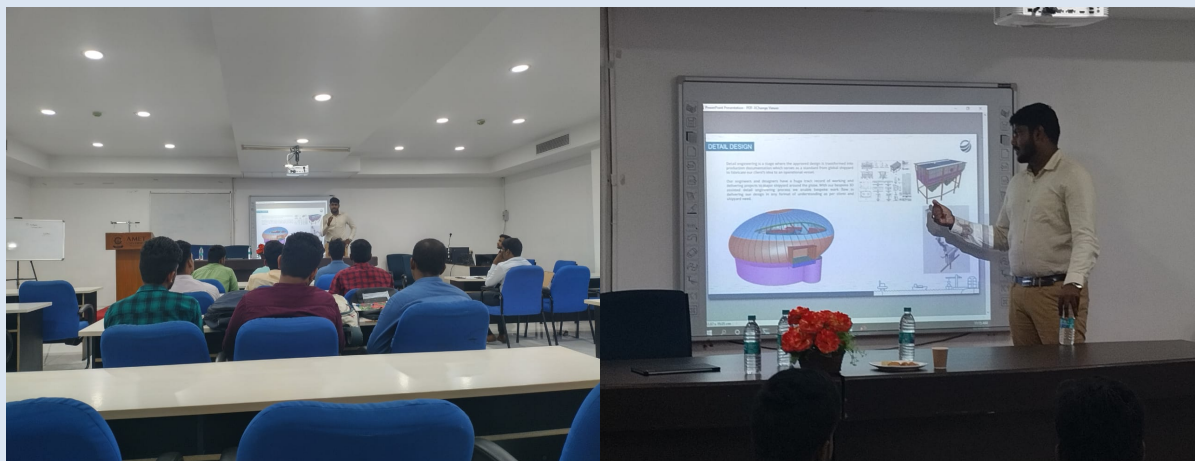
DESIGN AND ANALYSIS OF MARINE STRUCTURES

DATE - FEBRAUARY 6th, 2022

TIMINGS – 10.00 AM TO 11.00 AM

Resource Person - Mr. Rogero Fernanado, CEO, OPTIO Marine Pvt Ltd

Mr. Rogero Fernanado, has explained about the methods and tools for load, load effects and strength assessment. He also explained about the experimental, material and fabrication analysis of structures.



MACHINE LEARNING AND FLEET PERFORMANCE

DATE - MAY 21st, 2022

TIMINGS – 10.00 AM TO 11.00 AM

Resource Person - Mr. Abhiroop K, Naval Architect, Vedam Technologies Pvt Ltd. Mr. Abhiroop.K has explained about the critical aspects of fleet management that AI(ML) can optimize and how it helps to resolve the major challenges of the fleet industry. He also explained about the benefits of adopting ML-driven fleet management.



DETAILED SHIP DESIGN

DATE - APRIL 24th, 2022

TIMINGS – 10.00 AM TO 11.00 AM

Resource Person - Mrs. Shiva Shankari & Mr. Tamizharuvi, Maniyan, Cyber Marine, Mumbai.



Mrs. Shiva Shankari & Mr. Tamizharuvi, Maniyan has detail explained about the basics of ship design. Hull form design and optimization, Detailed technical specifications, Finalized General Arrangement, Hydrostatics & stability calculations, Main scantling computations, Structural design, Equipment selection, Machinery design, Electrical design and Safety and navigation are the topics covered during the session.

WORKSHOP

RENEWABLE ENERGY SOURCES

DATE - APRIL 20-21st, 2022

Resource Person - Mr. Sagar Saran, Senior Naval Architect, Renewable Energy, Larsen and Turbo.

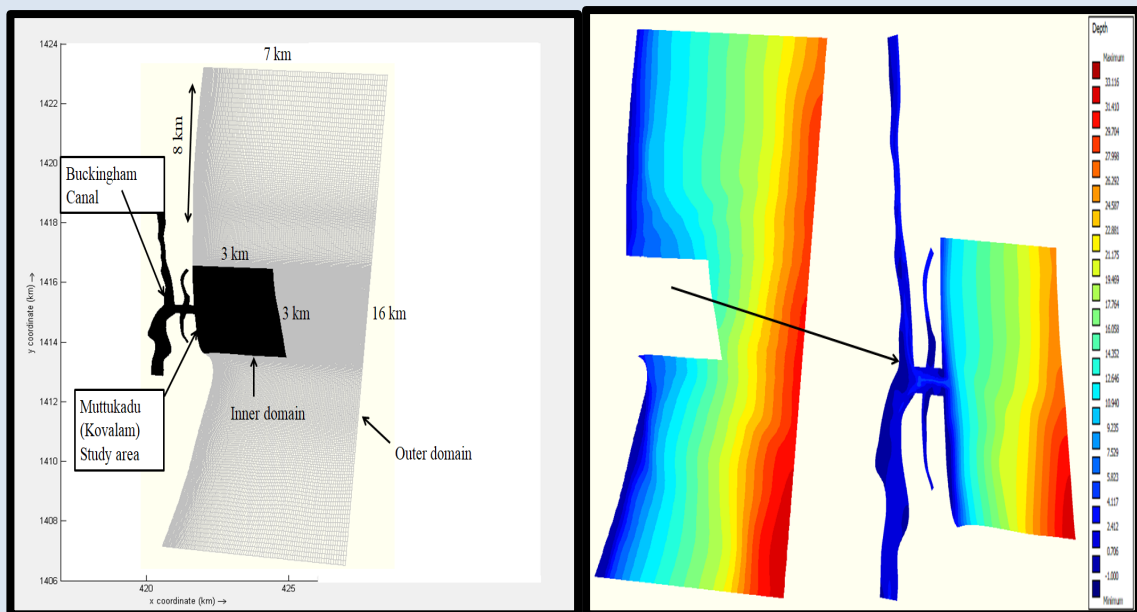


Mr. Sagar Saran has explained the role and extent of renewable energy technology adoption by the shipping sector varies depending on the scale, function and operational location of the particular vessel, technology providers contend that research and innovation efforts on the use of renewable energy options, together with efficient designs, are already achieving significant results for immediate and near-term energy savings for a number of selected applications.

PROJECT

Name of the Project/ Endowments, Chairs	Name of the Principal Investigator/Co Investigator	Name of the Funding agency	Type (Government/Non-Government)	Department of Principal Investigator/Co Investigator	Year of Award	Funds provided (INR in Lakhs)	Duration of the project
Numerical modeling on hydrodynamic stability analysis of tidal inlet	Dr. K. Thiruvengadasamy (Principal Investigator)	Ministry of Earth Sciences, Government of India	Government	Department of Naval Architecture & Offshore Engineering	2018-2019 (20 th March 2019)	21.72 Lakhs	3 years (2018 - 2021)

BATHYMETRY OF THE STUDY AREA -INNER DOMAIN AND OUTER DOMAIN



Domain boundary is created from satellite imagery. Input files for the model are prepared from measured and secondary data. Using these input files, the model set up for the flow wave coupled model is prepared. Model is calibrated for tide. Measured data is used for validating the model. The validated model is run for one year (from 01/01/2018 to 31/12/2018) to study the stability of the tidal inlet. The numerical model simulations is only one model along the study area of Muttukadu (Kovalam), have been performed. Transport conditions are also defined for the boundaries. The input parameters for numerical simulations are: (i) Bathymetry data, (ii) Groins dimensions, (iii) Wave data (iv) Tide data (v) Sediment size.

PUBLICATIONS

S.No	Staff Name	Title of the paper	Conference	Date
1	Dr.R.Lilly	Experimental Investigation of Geopolymer Flexible pavement with Waste Plastics Aggregates	Nature environment & Pollution Technology, Scopus Indexed Journal	2 nd June 2022
2	Dr.R.Lilly	Use of Carbon Nano Tube (CNT) as a wrapping material to the building structures to control Salt Damage	ICCET'22	30 th April & 1 st May 2022
3	Dr.R.Lilly	Analysis of Ground Water Storage before and after the construction of Metro Rail Corridor.	ICRASCE'2022	15-16 th June 2022
4	Dr.Shameem.B.M	Perfromance Monitoring Insight Using Predictive Analytics:A step towards IMO's GHG Emission Goals 2030	IEEE Oceans 2022	21-24 th Feb 2022
5.	Dr.P.Sivabalan	A Numerical Study on Eco-friendly Composites for Shipbuilding	ICMIRD' 22	24 th April 2022
6.	S.Lt.Prem Anand	A Numerical Study on Eco-friendly Composites for Shipbuilding	ICMIRD' 22	24 th April 2022

PLACEMENTS

Students of the Department of NA&OE have been given opportunities by various esteemed organizations in the field of Naval Architecture and Offshore Engineering, as well as in allied industries. Some of our past recruiters include:



EXISTING BATCH

S. No	Name of the Student	Name of the Employer	Number of Students
1	ASUTOSH PADHY V ROHAN KUMAR RAGESH R SHARUK BASHA S SHOBHIT SHARMA VIVEK KUMAR CHAUHAN VIKRAM V HARI ARJUN VIGNESH KUMAR	Synergy Marine	11

	SREERAG.A.C YOGI P		
2	RISABH BANTIYA S KRISHNA PRASAD THILAKAN	Capital Ship Solutions	2
3	SRIHARIRAM D PRAVEENBALAJI S HEMACHANDRAN R SARANG S A	Srisai Oilfield Services	4
4	DHANUSHMA. ASWIN S NAIR ASHWIN VINOD	Accel India	3
5	VIVEK KUMAR SINGH SRILESH M P BABITHA S	Unique Solutions	3
6	BASKAR ANTONY PETLEES A MOHAMMED THAMIMULLAH K MOHAMMED ZAMA	Optio Marine	3
7	VIGNESH L	Viksandvik	1
8	PREMNATH O L VIVEK R RAMAIAH MUTHU.S AKKASH S	Maanschaft Marine	4
9	CHRISTINAL B	L K Marine Services	1
10	GOTTAM KARTHIK REDDY	Cyber marine	1
11	SRI SANJAI V	Conceptia	1
12	B ARAVIND	Albion	1
13	A K VISHNUNATH	Ammus Marine	1
Total Placement			36

ALUMNI TESTIMONIALS



Name-Sivaranjani.A
Batch-2017-2021

Works as Naval Architect, Synergy Marine Group

My journey with AMET is definitely one I will cherish for life. In a very short span of time, I was able to learn a lot, which helped me excel academically and personally. Overall development of an individual and also provides multiple opportunities and exposure to develop new skills. AMET suits for this competitive environment. It helped a lot to perform my best to this world.




Name- Mr.Gugan.G
Batch-2008-2012
Designation-Head surveyor, Synergy Marine Group

My alma matter has been an integral part of shaping me to become the person I am. We always had the freedom of choose what interests us with the faculty always being available to mentor us and giving us the push we need. My take away is a huge bunch of memories and a great deal of learning.

Department faculty members



NAME	Prof. M. S. P. Raju	
DESIGNATION	Head of the Department	
QUALIFICATION	M.Tech (Ocean Engineering), IIT Madras, B.E (Naval Architecture), Andhra University, Visakhapatnam	
SPECIALIZATION	Ship Hydrodynamics and Classification Society survey/rules	
EXPERIENCE	24 years	
E-MAIL	m.s.p.raju@ametuniv.ac.in	
CONTACT NO.	9989625271	
NAME	Dr. Thiruvenkatasamy K	
DESIGNATION	Professor	
QUALIFICATION	Ph. D (Coastal Engineering), Japan M.S (Ocean Engineering), IITM	
SPECIALIZATION	Coastal Engineering, Hydrodynamics Ocean Energy	
EXPERIENCE	18 years(Teaching & Research)	
E-MAIL	thiruvenkatasamy.k@ametuniv.ac.in	
CONTACT NO.	9600132904	
NAME	Dr. B. M. Shameem	
DESIGNATION	Assistant Professor	
QUALIFICATION	Ph. D (Ocean Engineering), IIT Madras, M.Tech (Ocean Engineering), CUSAT, Cochin.	
SPECIALIZATION	Experimental and Numerical Ship Hy	
EXPERIENCE	14 years	
E-MAIL	shameem.bm@ametuniv.ac.in	
CONTACT NO.	9840290907	

Department faculty members



NAME Dr. P. Sivabalan
DESIGNATION Assistant Professor
QUALIFICATION Ph. D (Ocean Engineering), IIT Madras, M.Tech (Naval Architecture & Ocean Engineering), IIT Kharagpur
SPECIALIZATION Ship Motions and Control
EXPERIENCE 16 years
E-MAIL sivabalan@ametuniv.ac.in
CONTACT NO. 9952244560



NAME Dr. Prasob P. A.
DESIGNATION Assistant Professor
QUALIFICATION Phd (Composite Materials) VIT University, M.Tech CAD/CAM, Anna University
SPECIALIZATION Mechanical Engineering, Structures
Vibration
EXPERIENCE 6 years in Industry, 5 years in Teaching
E-MAIL pprasob@ametuniv.ac.in
CONTACT NO. 7708166025



NAME Dr. Lilly
DESIGNATION Assistant Professor
QUALIFICATION Ph. D (Water Resources), Anna University, M.E (Irrigations & water management)
SPECIALIZATION Geo technical, Hydrodynamics
Visual mold flow
EXPERIENCE 14 years
E-MAIL lilly1979@ametuniv.ac.in
CONTACT NO. 9341115534



Department faculty members



NAME Mr. Prem Anandh
DESIGNATION Assistant Professor
QUALIFICATION M.S. (Naval Architecture & Offshore Engineering), AMET University Chennai, B.E. (Naval Architecture & Offshore Engineering), AMET University Chennai
SPECIALIZATION Naval Architecture, Hydrodynamics, Ship Design Software's
EXPERIENCE 8 years
E-MAIL premanandh@ametuniv.ac.in
CONTACT NO. 8072973051



NAME Mr. Kolli Sujit Kumar
DESIGNATION Assistant Professor
QUALIFICATION M.Tech, Naval Architecture & Ocean Engineering, Indian Maritime University, Visakhapatnam, B.E Civil Eng Andhra University, Visakhapatnam
SPECIALIZATION Ship Stability and Construction
EXPERIENCE 6.5 years
E-MAIL kolli.sujit@ametuniv.ac.in
CONTACT NO. 9959116665



NAME Mr. Yarabala Gopi Krishna
DESIGNATION Assistant Professor
QUALIFICATION B.Tech (Naval Architecture & Ocean Engineering)
SPECIALIZATION Resistance and Propulsion, Wave Hydrodynamics, Design of Offshore Structures, DNV-SESAM and NAPA Software
EXPERIENCE 9 years
E-MAIL yarabalagopikrishna.s@ametuniv.ac.in
CONTACT NO. 9840777636



Prof. MSP Raju
Head of the Department
Department of Naval Architecture &
Offshore Engineering
Academy of Maritime Education and Training (AMET)
(Deemed to be University)
135, East Coast Road, Kanathur - 603112, India.
E-mail Id: msh.rajn@ametuniv.ac.in