

# PROSPECTUS 2025- 2026

## Four Year Residential B.Tech. (Marine Engineering) (Affiliated to Indian Maritime University)

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## INTRODUCTION

Ocean shipping has always been the most efficient mode of transporting goods. This fact has not changed over the centuries even though technology has made enormous strides. In fact, the maritime industry has effectively harnessed technology to become increasingly more efficient and thereby sustain its comparative advantage over other forms of transport. The growth of global trade has led to a commensurate growth in the world fleet to well over 50,000 ships plying the world's oceans today. These ships are manned by deck officers who are responsible for navigation, cargo operations and maintenance of the ship and by engineer officers who maintain and operate all the machinery on board.

Marine engineering is a multi-disciplinary, “non-conventional” branch of engineering, so called because a marine engineer working aboard a ship has to perform varied functions in the areas of mechanical, electrical, electronic, and environment engineering. A marine engineer needs to perform these functions in the self-contained environment of a ship at sea and must also demonstrate additional skills such as firefighting and damage control. Further, ships are required to remain in operation 24 hours a day, 365 days a year. All this makes the Marine Engineer's job extremely challenging and demanding.

At the same time, the opportunity to travel the world, work with global organizations and experience varied technologies make it an exciting career. The demands of the career are of course compensated by excellent remuneration leading to a comfortable lifestyle at an early age.

Due to the global nature of the shipping industry, to be eligible for employment on board ships, Marine Engineers must be trained in conformity with the requirements of the International Maritime Organization (IMO) and certified by a recognized authority with respect to competency level. In India, the Directorate General of Shipping (DGS) approves maritime training institutions and their curricula. The same agency also administers examinations to evaluate competency and issues appropriate Certificates of Competency. The general level of training imparted to Indian officer candidates and the standards maintained in evaluation are globally recognized and this ensures the worldwide acceptability of the Indian seafarers.

## CAREER PATH OF A MARINE ENGINEER

There are a number of possible ways one can become a qualified Marine Engineer. However, the track that provides the strongest foundation in engineering theory and practical skills is by commencing with Tolani Maritime Institute's (TMI's) B.Tech. degree programme in Marine Engineering.

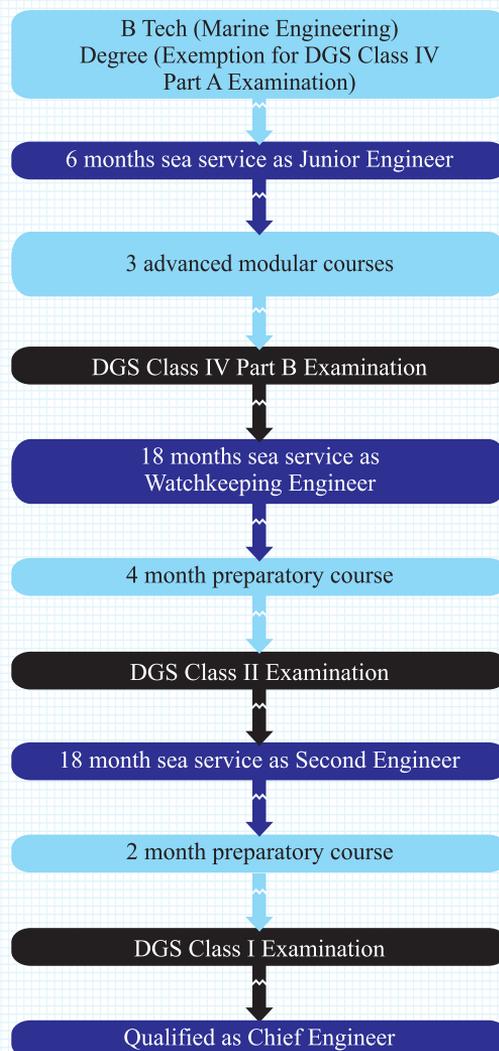
The chart shows the requirements for progressing from a qualified Watch keeping Engineer to Chief Engineer. New Watch keeping Engineers today command a remuneration of about US\$ 2,200 per month on board while Chief Engineers start at a minimum of US\$ 9,000 per month. However, it is relevant to note that typically ships' officers spend about 6 to 8 months in a year working on board and the rest of the time on leave. Therefore, a Chief Engineer can expect to earn at least US\$ 55,000 per annum. At the same time, a sea service requirement of 12 months can be expected to take about 18 months to complete. Merchant Navy Officers are allowed to claim tax-

free income subject to conditions / tax regulations.

Upon graduation from TMI, the students get exemption from appearing in the Part A of the DGS Class IV Examination. However, they have to complete a minimum of six months sailing and 3 advanced modular courses before they become eligible to appear in the Class IV Part B Examination as per Directorate General of Shipping (DGS), Govt. of India regulations. After passing this exam, they become certified Watch keeping Engineers, commonly known as MEO Class IV.

It is not uncommon for Marine Engineers to retire from sea service well before the traditional retirement age. They are then able to find numerous opportunities ashore with shipping companies, hotels, hospitals, oil and gas companies, insurance and survey agencies and other organizations using similar expertise.

The ship board training of six months after graduation is a mandatory requirement for those who wish to pursue ship board career and the institute will assist in arranging the ship board training without any extra fee.



## B.TECH. MARINE ENGINEERING PROGRAMME

The programme is spread over a period of 4 years and is divided into 8 academic semesters. At TMI candidates for the B.Tech. degree in Marine Engineering are grounded in the foundations of applied engineering sciences, mathematics, computers, mechanical engineering, electrical engineering and electronics. Over and above they are provided an in-depth understanding of specific mechanical, electrical and instrumentation systems onboard ships - their operations and maintenance. The formal academic curriculum also includes the development of competency in verbal communication, a safety culture as well as knowledge of the maritime environment and institutional aspects of shipping.

Marine Engineering education is distinctive in its emphasis on practical knowledge and skills. Apart from the traditional experimentation and demonstration work done in laboratories in conventional engineering curricula, Marine Engineering requires that graduates be skilled in using onboard workshops and tools to effect repairs of components and manufacture simple items.



Also essential is the ability to monitor normal operations of a power plant including all the auxiliary machinery and the capability to troubleshoot malfunctions. Therefore, the Marine Engineering curriculum has large components of workshop training, hands-on exposure to equipment maintenance and actual watch keeping of engineering systems on the campus.

The shipboard/shore internship training of one semester is a mandatory & integral requirement for this programme and the institute normally arranges for the training by organising campus placements.

The TMI programme is unique for the industry internship component, which underscores the emphasis on application of theory as well as development of skills and provides a means to reinforce the learning process. During the last year of the degree programme students are required to spend final semester for completion of internship requirement integral to the degree program.

The Placement Cell of TMI helps students secure internship positions either onboard ships or ashore in 'Prabhu Vidya - Ship in Campus'. During internship, students are expected to develop an appreciation for real world issues related to operations, maintenance, safety and discipline. On completion of internship, students are required to submit a detailed report of the training period and are evaluated for the semester on the basis of this report and feedback from the internship provider. In most cases this internship relationship leads to permanent employment on graduation. A "Student employability index" helps to access students in this regards.

## **EVALUATION**

The academic year is divided into two semesters of 18-week each. During each semester, students are required to complete a prescribed set of courses as laid down in IMU syllabus.

The curriculum on campus is structured so that all students complete, by the end of the sixth/seventh semester, all the modular courses required for employment onboard a ship. In addition, the workshop training ensures that, by the end of the seventh semester/before boarding vessels, the students are also reasonably skilled in the use of shipboard tools, welding, maintenance procedures and other practical shipboard skills.

IMU grading system as applicable will be followed.

## **CODE OF CONDUCT**

TMI requires a high level of discipline in terms of personal appearance and conduct, class attendance, participation in sports etc. All students wear a standard Merchant Navy uniform. Residence in the hostel is compulsory for all students for the entire programme, except during the Internship Semester in the fourth year. The Institute strives to instill discipline by encouraging students to participate in various activities that help personality development, team building and a feeling of co-operative amity. All students must participate in all scheduled activities, such as

physical training, swimming, games, parades and inspections. Students are expected to abide by the institute rules at all times while on or off campus.

Consistent with the requirements of present legislation in the shipping industry, **TMI has a strict Drug and Alcohol Policy with zero tolerance.** Non-compliance is dealt with severely and may lead to expulsion. Students are expected to protect the property of the Institute at all times and conduct themselves in a manner so as not to cause any damage. The institute reserves the right to recover from errant students the cost of damage inflicted on any Institute property and to take other disciplinary action.

The institute normally operates a five and a half day workweek. The workday commences with a muster at 6:00 am followed by 45 minutes of physical training. Thereafter, classes commence at 8:30 am and continue till 4:40 pm with a 60-minutes lunch break. Sports are scheduled for late afternoon and students are expected to utilize the evenings for self study, assignments and extra curricular activities.

Leave of absence is granted for emergency reasons only upon the written request of parents. Unauthorized absence is treated as a serious breach of the rules. Minimum 85% attendance is required in classrooms, while workshop sessions require 100% participation. In the event of deficiency in workshop participation, it is necessary for students to complete the requisite workshop hours with attendance outside the normal schedule during the semester or during holiday periods.

Visits of guests are regulated. Parents, guardians and personal friends are allowed to visit students in the hostel during specified visiting hours.

**Ragging on campus is strictly prohibited. Any incidence of ragging is immediately acted upon and the guilty is liable to be dismissed from the Institute.**



## B.TECH. MARINE ENGINEERING DEGREE CURRICULUM

### Semester I

Mathematics - 1  
Physics  
Computers  
Industrial Chemistry  
Workshop Technology  
Maritime Awareness  
English and Communication  
Essence of Indian Traditional Knowledge  
Constitution of India and Merchant Shipping Act

#### Practical Laboratories/Workshops:

Physics  
Workshop Technology  
Marine Engineering Graphics  
English and Communication Lab

### Semester III

Basic Control Engineering  
Solid Mechanics  
Fluid Mechanics  
Applied Thermodynamics  
Statistics and Data Analysis using Python and R  
Marine Machinery Systems  
Electrical Machines  
Mechanics of Machines

#### Practical Laboratories/Workshops:

Basic Control Engineering  
Solid Mechanics  
Fluid Mechanics  
Applied Thermodynamics and Industrial Chemistry  
Marine Workshop (Electrical Safety, Maintenance and Repair)

### Semester V

Introduction to CFD  
Marine Internal Combustion Engines and Technology - 2  
Marine Auxiliary Systems and Deck machinery  
Marine Steam Plant  
Naval Architecture - 1  
Ship Structure and Marine Shafting  
Marine Design: Pressure Vessels, Machinery Components and Vibrations  
Marine Electrical Motors - Starters and Drive Controls  
Heat Transfer and Marine Heat Exchangers

#### Practical Laboratories/Workshops:

Marine Steam Plant  
Marine Simulators: Plant and Machinery Systems

### Semester VII

Piping and Pumping Systems: Design and Operation  
PLC and Automation Control  
Management Principles of Ship Operation  
Maritime Law and Ship's Business  
Marine Materials  
Fuels and Lubricants  
Sea Trials, Dry Docking, Shipyard

#### Practical Laboratories/Workshops:

PLC and Automation Control  
Maintenance and Repair of Electrical, Electronic and Automation Systems

### Semester II

Mathematics - 2  
Basic Electrical Engineering  
Basic Electronics  
Engineering Mechanics  
Basic Thermodynamics  
Marine Electrical Power Generation and Distribution

#### Practical Laboratories/Workshops:

Basic Electrical Engineering  
Basic Electronics  
Marine Engineering Drawing  
Ship Familiarization  
Marine Workshop (Mechanical)

### Semester IV

Strength of Materials  
Marine Turbo Machinery  
Marine Internal combustion Engines and Technology - 1  
Marine Pollution Prevention and Safety  
Electro Technology  
Marine Boilers and Steam Systems  
Automation, Control Engineering and Safety Devices  
Refrigeration and Air Conditioning

#### Practical Laboratories/Workshops:

Automation, Control Engineering and Safety Devices  
Marine Engineering Skills

### Semester VI

Artificial Intelligence and Machine Learning  
Marine Machinery Systems and Design  
Marine Propulsion Plant: Configuration and Characteristics  
Marine Propulsion Plant and Auxiliary Machinery:  
Performance Assessment  
Naval Architecture - 2  
Shipboard Safety Management

#### Practical Laboratories/Workshops:

Marine Simulators: Electrical, Propulsion and Manoeuvring  
Technical Report Writing and Engineering Models  
Practical Hydraulics and Pneumatics

### Semester VIII

Practical Training with Assignment and Project Work (with TARB)

### Micro Credit Course Baskets

MC Basket 1 Shipyard Studies  
MC Basket 2 Ship Operations  
MC Basket 3 Digital Design And Modern Tools  
MC Basket 4 Shipping Business  
MC Basket 5 Ocean Studies  
MC Basket 6 Energy And Environment  
MC Basket 7 Management

4 Micro Credit (MC) Courses are to be chosen from the available Baskets. From any basket, only 1 Course to be chosen. MC Courses have to be assimilated primarily through self-study.

## FEES AND ESTIMATED EXPENSES ACADEMIC YEAR 2023-24

	SEM I	SEM II	1st YEAR (Sem I & II)
<b>Fees</b>			
Admission & Orientation Fee	25,000	NIL	25,000
Tuition Fee	96,000	96,000	192,000
Welding	NIL	10,000	10,000
Campus & Establishment Fee	124,500	124,500	249,000
<b>Total fees</b>	<b>245,500</b>	<b>230,500</b>	<b>476,000</b>
<b>Student Services Expenses</b>			
Books	2,500	2,500	5,000
Laundry	2,500	2,500	5,000
Messing	32,250	32,250	64,500
Medical Insurance Premium	1,500	NIL	1,500
Stationery	3,000	3,000	6,000
Uniform	20,000	2,000	22,000
Total of Student Services Expenses	61,750	42,250	104,000
Total Fees & Student Service Expenses	3,07,250	2,72,750	5,80,000
DGS Cess @ 1% of total fees & expenses	3,073	2,728	5,800
Caution Deposit (Interest free and Refundable)	20,000	NIL	20,000
<b>Total Payable to TMI</b>	<b>3,30,323</b>	<b>2,75,478</b>	<b>6,05,800</b>
<b>Payable to Indian Maritime University (IMU)</b>	<b>35,000</b>	<b>NIL</b>	<b>35,000</b>
<b>Total Amount (TMI plus IMU)</b>	<b>365,323</b>	<b>275,478</b>	<b>640,800</b>

### Note:

- For Student enrolling in the first year in Academic Year 2023-24, the estimated fees and Student Services for the four year programme will be approx. Rs. 22.83 Lakhs
- Female students are entitled to a waiver of 50% in Tuition fee for each semester.
- Student Services Expenses are charged on actuals.
- Amount payable to Indian Maritime University (IMU) is required to be paid directly by the students to IMU through IMU portal.
- Caution Deposit is payable on admission. The interest free caution deposit is refundable after the end of programme.
- Statutory taxes / levies, if any imposed, will be charged on actuals.
- Monies due for each semester is payable at the beginning of semester before due dates.
- Late fee @ 18% p.a. is applicable for monies received after due date.
- Value added courses undertaken by the students will attract additional fees.
- Separate charges would be levied at actual costs incurred by the Institute in respect of excursions, visits, medical expenses (to the extent not covered under insurance).
- Fees, Estimated Expenses and Caution Deposit are payable in either of the modes mentioned below -
  - Online through our website
  - Demand Draft in favour of 'Tolani Maritime Institute' at any of the HDFC Bank branches

### Medical Insurance

TMI has facilitated an insurance policy at an annual cost of Rs. 1,500 per student. This policy covers the following\*:

- Accidental death of student - Rs.5,00,000/-
- Hospitalisation expenses for student - Rs.1,00,000/- per year
- Accidental death of bread winning parent to cover fees of the student for remaining period of the course.

\* - Conditions apply



★ 25 Years of Excellence ★

## Refund Policy

As mentioned on institute website:

<https://tmi.tolani.edu/admission/b-tech-marine-engineering/refund-policy/>

## LOANS & SCHOLARSHIPS

### Loans

TMI degree programmes are approved by AXIS Bank, HDFC Bank, Corporation Bank, State Bank of India and Credila (an HDFC Ltd. Company). However, candidates can approach any bank for financial assistance.

### Scholarships

Liberal scholarships are available every semester to the deserving students. The details of scholarships are as follows-

### Merit Scholarships

The institute awards generous merit scholarships to attract the very best talent and promote sustained achievement. For each Marine Engineering on-campus semester, 35 top ranking students of the batch are awarded scholarships aggregating to approx. Rs. 46 lacs per year. The highest scholarship of Rs.40,000 /- per semester is named the '**Dr. C.P. Srivastava Scholarship**'.

In the first semester on admission, the new entrants are ranked on the basis of the merit list prepared for admission to the Institute. In subsequent semesters, students' performance during the previous semester at the campus determines the ranking for the purpose of scholarships. The Institute's Scholarship Committee administers the above scholarships. This scholarship is given for the on-campus semesters and not for the period spent on internship.

### Need cum Merit based Scholarships

Need cum Merit based Scholarships have been instituted for the students undergoing UG programmes at TMI as follows:

#### **Tolani Education Foundation (TEF)**

Tolani Education Foundation awards scholarships each semester to ME and NS degree course students to provide financial support to the identified students undergoing UG programmes at TMI Induri. The Scholarship amount of Rs. 15,000/- per semester once awarded continues till the

end of the third year of the programme subject to the performance and conduct of the student conforming to the laid down rules.

### **Mrs. Papu Tolani Need cum Merit Scholarship**

Mrs. Papu Tolani, wife of Dr. N P Tolani has instituted a scholarship of Rs.10,000/- per semester. Once a scholarship is awarded, it continues till the end of the programme for all on campus semesters subject to the performance and conduct of the student conforming to the laid down rules.

### **Menghraj Karna Need-cum-Merit based Scholarship for Girls**

Menghraj Karna scholarship is instituted only for girl students undergoing UG programmes at TMI, Induri. The scholarship amount is Rs.10,000/- per semester and once the scholarship is awarded, it continues till the end of the third year of the programme subject to performance and conduct of the student conforming to the laid down rules.

### **Vasant J. Sheth Memorial Foundation Need cum Merit based Scholarship**

Vasant J Sheth Memorial Foundation offers three scholarships. Each scholarship is of Rs.30,000/- per semester thus totalling Rs.2,40,000/- for four years. This is a merit-cum-need based scholarship. Once the scholarship is offered, it will be continued for the entire programme to the students selected from each batch of new entrants, provided the students' performance and/or conduct has been satisfactory. The awardees should maintain a consistent CGPA of at least 7. The titles to these three scholarships are:

Vasant J Sheth Memorial Scholarship  
Vasant Sheth/Ship Safety Trust Scholarship  
Vasant Sheth/Cyrus Guzder Scholarship

### **Industry Sponsored Scholarships**

To promote meritorious students, leading shipping companies have instituted scholarships for the students selected by them in the first/second year of the programme. The scholarship amount varies from US\$ 50 to US\$ 200 per month and continues till the student joins respective company as per the joint agreement.

### **Concession in Fee for Girl Students**

TMI is committed to encouraging girls' participation in the maritime industry. To this end, in addition to the eligibility for the scholarships mentioned above they are also given a reduction of 50% in Tuition fees per semester.



## **ELIGIBILITY**

Unmarried candidates, of either sex, born on or after 1st September 2004 are eligible to apply for admission in 2025. The date of birth as recorded on the applicant's School Leaving Certificate will be considered for this purpose. For female candidates there is a relaxation of the age limit up to 2 years.

Candidate must have successfully completed the Senior Secondary Examination (10+2) or its equivalent having secured at least 60% marks in Physics, Chemistry and Mathematics (P-C-M) and at least 50% marks in English either in Class X or Class XII.

Candidates must meet the minimum physical fitness and medical standards as laid out in the Merchant Shipping (Medical Examination) Rules, 2009 as amended from time to time. It is important to note that any deficiency in this respect would disqualify a candidate from a career at sea.

**Qualifying in IMUCET is mandatory for admission**

**Eyesight: Distance vision unaided 0.5 (6/12) in each eye or 0.67 (6/9) in better eye and 0.33 (6/18) in other eye. Normal colour vision shall be tested by Ishihara test chart.**

**Having Passport is mandatory at the time of admission**

## **APPLICATION PROCESS**

Step I : Fill the application form on TMI website <https://tmi.tolani.edu>. Last date for availability of forms - as declared on website

Step II : Pay the **non-refundable** application and online test fees through the website.

TMI will inform the applicant about TMISAT dates.

Please note that you will be required to upload the following documents in soft copy while filling the form online:

1. Recent passport size photograph
2. Class X mark sheet
3. Class XII mark sheet (Candidates appearing for Class XII exam in 2025 may submit these copies after declaration of results.)
4. Leaving / Transfer Certificate / Birth Certificate (For age proof)
5. Downloaded copies of class XII mark sheet from internet (Candidates appearing for Class XII exam in 2025 may submit these copies after declaration of results.)
6. Passport

## LATERAL ENTRY

TMI also offers Admissions by Lateral Entry into 2nd year of B.Tech. Marine Engg. programme depending upon the eligibility criteria as laid down by IMU and availability of seats at TMI.

The criteria for admission into 2nd year B.Tech. Marine Engg. are as follows:

- Unmarried candidates of either sex, less than 24 years of age
- Candidates who have passed
  1. 3-years Engineering Diploma in Marine /Mechanical/Electrical/Electrical & Electronics, from the colleges approved by AICTE or State Board of Technical Education with minimum 60% of aggregate marks in the last year of the Diploma Course  
[OR]
  2. 4-years Diploma in Shipbuilding Engineering from the colleges approved by AICTE or State Board of Technical Education with minimum 60% of aggregate marks in the last year of the Diploma Course  
[OR]
  3. 1st year training from the Alternate Training Scheme, approved by D G Shipping  
[OR]
  4. 1st year from the Engineering College in other streams like Mechanical or Electrical approved by AICTE with minimum 60% average marks  
[OR]
  5. 3 years Diploma course in the following categories, from the colleges approved by AICTE or State Board of Technical Education with minimum 60% of aggregate marks in the last year of Diploma Course:
    - a. Mechanical Engineering Stream:  
Automobile/Machine Tools and Maintenance/Plant Engineering/Production Technology/Production Engineering/Advanced Diploma in Tool and Die Making
    - b. Electrical Engineering Stream:  
Electrical Power System
    - c. Electrical and Electronics Engineering Stream:  
Digital Electronics/Electronics and Communications/Electronics and Telecommunication/Industrial Electronics/Electronics/Electronics Production and Maintenance/Instrumentation/Instrumentation and Control Engineering

And

The candidate must have secured a minimum of 50% marks in English language at the 10th or 12th or the Degree/Diploma Course conducted by a recognized board or University.

The candidate should have completed the diploma within its stipulated duration of 3 or 4 years as the case may be.

### Application Procedure:

Apply online from TMI website: <https://tmi.tolani.edu>

Course commencement: As declared on website.



## **SELECTION PROCESS**

Tolani Maritime Institute's selection process will test candidates by taking into account candidate's 10+2 PCM marks, rank in IMUCET, result of the TMI online entrance exam, performance in an interview and satisfactory medical tests.

### **TMI Online Scholastic Aptitude Test (TMISAT)**

The test will consist of a Personality test of half an hour followed by Physics, Mathematics, Verbal and Non Verbal intelligence test for two hours.

### **Medical Test**

The medical examination shall be conducted by DGS approved examiners to ensure that candidates are “Fit for sea service”. List of Medical Practitioners approved by D G Shipping is available on the institute’s website.

### **Personal Interview**

The interviewing panel of the Institute, which comprises of faculty and external experts, will make an evaluation of the candidates’ suitability for a sea faring career. All the candidates tested and interviewed will be ranked on the basis of application information, tests and interview. This ranking by the institute will be final and binding. Candidates will be offered seats strictly on basis of merit list.

Admission is confirmed after successfully meeting all the eligibility criteria, getting shortlisted and paying the full fees for semester one by the due date as intimated through Admission Letter. Failure to make the required payment or to report for the course by the stipulated dates along with valid passport and required documents will result in the admission being cancelled.

Candidates accepting admission shall be required to submit the certificates in original together with set of photocopies as intimated in the Admission Letter.

Please note that all photocopies are to be in A4 portrait format. These photocopies are required for Directorate General of Shipping, Govt. of India documentation.