



**COLLEGE OF MARITIME EDUCATION**

LYCEUM OF THE PHILIPPINES UNIVERSITY

Capitol Site, Batangas City

Effectivity

AY 2023-2024

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# **LYCEUM OF THE PHILIPPINES UNIVERSITY**

## ***LPU UNIFIED VISION***

An internationally accredited university dedicated to innovation and excellence in the service of God and country.

## ***LPU BATANGAS CAMPUS VISION***

To be a recognized industry-driven university in the Asia Pacific Region by 2026.

## ***LPU BATANGAS CAMPUS MISSION***

LPU-B, espousing the ideals of Jose P. Laurel, is dedicated to develop innovative leaders, lifelong learners and globally competitive professionals constantly in pursuit of truth and acts with fortitude (Veritas Et Fortitudo) to serve God and country (Pro Deo Et Patria).

## **Institutional Core Values**

LPU-B aims to develop and strengthen the following core values:

- G** – God Centeredness
- L** – Leadership
- I** – Integrity
- N** – Nationalism
- C** – Collaboration
- S** – Service Orientation

## ***LPU BATANGAS CAMPUS QUALITY POLICY***

The Lyceum of the Philippines University-Batangas is committed to provide quality education, training and services to its students to achieve optimum customer satisfaction and to be responsive to the need for continuous improvement.

The quality objectives shall be formulated, implemented, monitored, and evaluated in accordance with this quality policy.

All our instruction, research and community extension activities shall be marked with quality in compliance with industry standards and applicable statutory and regulatory requirements of different local and international certifying/accrediting bodies/agencies.

All our facilities, resources, and efforts shall be dedicated to deliver quality education, training and services in consideration of risk management.

This policy shall be communicated to, understood and applied by the LPU-B Family.

## ***INSTITUTIONAL LEARNING OUTCOMES***

LPU has identified the institutional learning outcomes which represent the qualities that all LPU students should possess when they graduate. These outcomes are anchored on the 4C's: competence, commitment, credibility and collaboration.

## **1. Competent Learners**

- Communication – Express ideas clearly and effectively in oral and written communication; demonstrate proficiency in the English language.
- Computer & IT Literacy – Demonstrate knowledge and skills related to computer and information technology and utilize the same to process information and manage data observing legal and ethical concerns.
- Entrepreneurial – Engage in projects and activities using basic knowledge and skills in business management, entrepreneurship and finance management.
- Lifelong learning and global Skills – Demonstrate understanding of responsibility for environmental, local and global issues and utilize lifelong learning strategies and practical skills for life, survival and leadership.
- Interpersonal Skills – Demonstrate interpersonal skills through effective listening, establishing rapport, monitoring non-verbal signals and expressing awareness of and respect for self and others using a variety of written, oral and non-verbal communication media.
- Innovation and Research Skills – Define and apply different types of thinking and research skills and employ innovative strategies to solve real life situations; explore new challenges and conduct researches that are beneficial to the community.

## **2. Committed Achievers**

- Set specific – realistic and challenging goals and accomplish tasks and goals with discipline, determination and sense of urgency.
- Strive for excellence by providing continuous improvement and producing quality output.

## **3. Credible and Values-driven Leaders and Members**

- Manifest faith in the Supreme Being / Creator
- Identify and recognize personal, moral and spiritual values and beliefs
- Determine decisions, actions and consequences after thoroughly examining multiple perspectives (individual, community, national, global)
- Practice honesty, fairness and transparency in dealing with others.

## **4. Collaborative and Caring Team Leaders / Members**

- Identify and apply knowledge of personal and group processes skills in specific tasks in resolving conflicts.
- Build relationships to support group effectiveness by being open, cooperative, flexible and respectful of others and being a team player.
- Accept diversity and demonstrate respect for difference in acceptance of cultures, ideas, opinions and beliefs.
- Participate actively in uplifting the welfare of the community especially the less privileged sectors.

## **COLLEGE OF MARITIME EDUCATION**

### **COLLEGE VISION**

To be a recognized industry-driven Maritime Higher Education Institution in the Asia Pacific region by 2026.

### **COLLEGE MISSION**

Lyceum International Maritime Academy is committed to develop innovative leaders, lifelong learners and globally competitive Merchant Marine Officers who possess the required competencies and skills to actively contribute to the development of maritime profession constantly in pursuit of excellence to serve God and country.

## **BACHELOR OF SCIENCE IN MARINE ENGINEERING (BSMARE)**

### **Program Educational Objectives (PEO)**

Graduates of the Marine Engineering Program are expected to attain the following objectives 3 to 5 years after graduation:

1. Obtain a recognition as marine engineer officers in accordance with the standards of Maritime Profession.
2. Become socially involved marine engineer officers who actively contribute to the development and advancement of the local, national and international communities.
3. Initiate and contribute to the advancement of the Maritime Profession and industry through active engagement in research.
4. Engage in life-long learning to keep abreast with developments in the field of specialization and/or profession.

### **Program Description (BSMARE)**

Bachelor of Science in Marine Engineering is a four-year program with a curricular structure of 3 years academics and one-year onboard training. It is a higher education degree program that deals with the study of marine propulsion system, its auxiliary machineries, operation and maintenance as well as controlling the operation of the ship and care for persons on board at the operational level of marine engineering.

## **STUDENT OUTCOMES (SO a-e) and PERFORMANCE INDICATOR**

### **Common to all Programs in all Types of HEI (PO-a):**

#### **PO-5.1.a Engage in lifelong learning and understanding to keep abreast of the developments in Maritime practice.**

- PI-5.1.a.1 Assume responsibility for life-long learning and personal development.
- PI-5.1.a.2 Demonstrate continued competence and professional growth
- PI-5.1.a.3 Engage in activities to deal with contemporary issues in maritime industry
- PI-5.1.a.4 Upgrade technical knowledge to promote onboard competencies and skills

#### **PO-5.1.b Work independently and in multi-disciplinary and multi-cultural teams**

- PI-5.1.b.1 Manage their own learning, as well as providing experience of working within society.
- PI-5.1.b.2 Develop qualities through positive participation in community life and social cultural literacy.
- PI-5.1.b.3 Demonstrate the ability to take leadership roles in task-related socially enhanced activities.
- PI-5.1.b.4 Conduct case studies and perform experiment beneficial to the identified community.
- PI-5.1.b.5 Participate actively in uplifting the welfare of the community especially the less privileged sectors through community outreach program.

#### **PO-5.1.c Act in recognition and practice of professional, social, and ethical accountability and responsibility**

- PI-5.1.c.1 Participate actively in uplifting the welfare of the community especially the less privileged sectors through community outreach program
- PI-5.1.c.2 Adhere to different local and international ethical standards to become morally upright and decent.
- PI-5.1.c.3 Organize and manage teamwork of the crew for safe, effective and efficient operation of the ship and apply ship's contingency plans for emergencies.

#### **PO-5.1.d Preserve and promote "Filipino historical and cultural heritage".**

- PI-5.1.d.1 Exemplify love for country in the service of the Filipinos.
- PI-5.1.d.2 Demonstrate awareness to national interest and upholding Filipino pride.
- PI-5.1.d.3 Protect and promote culture and heritage.

## **Common to the BSMT and BSMarE Programs**

### **PO-5.2.a Apply knowledge in mathematics, science and technology in solving problems related to the profession and the workplace.**

- PI-5.2.a.1 Discuss concepts of physical and natural sciences.
- PI-5.2.a.2 Conduct case studies and perform experiment beneficial to the identified community.
- PI-5.2.a.3 Solve problems using scientific method, logical and reflective thinking.
- PI-5.2.a.4 Apply concepts, notations, and symbols in mathematical computations.
- PI-5.2.a.5 Identify mathematical equations and variables
- PI-5.2.a.6 Solve the given computing and mathematical problems
- PI-5.2.a.7 Validate solutions to computing mathematical problems Understand professional and ethical responsibilities.

### **PO-5.2.b Evaluate the impact and implications of various contemporary issues in the global and social context of the profession**

- PI-5.2.b.1 Develop innovative solutions that will address the different current global and social issues in the maritime industry.
- PI-5.2.b.2 Promote the advancement of the profession by making sense of and getting involved in current discourse that impacts on the maritime profession.

### **PO-5.2.c Use appropriate techniques, skills and modern tools in the practice of the profession to remain globally competitive.**

- PI-5.2.c.1 Prepare, start, use in parallel and change-over of generators and electrical motors.
- PI-5.2.c.2 Maintain and repair electrical system equipment, switchboards, electrical motors, generator and DC electrical systems and equipment.
- PI-5.2.c.3 Use of welding machines, lathe machines, and training modules related to shipboard operations.
- PI-5.2.c.4 Utilize engine room simulators using simulated scenarios on the conduct practical demonstration of skills.

### **PO-5.2.d Contribute to the existing body of knowledge through research or other forms of creative discourse and innovative works**

- PI-5.2.d.1 Identify research problem/question and formulate objectives.
- PI-5.2.d.2 Conduct a review of related literature as basis of research proposal.
- PI-5.2.d.3 Prepare a research proposal complying with the ethical standards and principles.
- PI-5.2.d.4 Conduct a research study as a member of a research team.
- PI-5.2.d.5 Analyze, interpret and utilize result.
- PI-5.2.d.6 Present the research study.

## **Specific to the Discipline**

**PO-5.3.1 Demonstrate the competence to perform the functions pertaining to navigation, cargo handling and stowage, controlling the operation of the ship and care for persons on board under Table A-II/1 and acquire some knowledge and understanding under Table A-II/2 of the STCW Code that are covered by this program under Annex A1.**

PI.5.3.1.1 Ensure compliance with pollution prevention requirements

PI.5.3.1.2 Maintain seaworthiness of the ship

PI.5.3.1.3 Prevent, control and fight fires onboard

PI.5.3.1.4 Operate Life Saving Appliances

PI.5.3.1.5 Apply medical first aid onboard

PI.5.3.1.6 Monitor compliance with legislative requirements

PI.5.3.1.7 Application of leadership and teamwork skills

PI.5.3.1.8 Contribute to the safety of the personnel and ship

**PO-5.3.2 Demonstrate the competence to perform the functions pertaining to marine engineering, electrical, electronic and control engineering, maintenance and repair and controlling the operation of the ship and care for persons on board under Table A-III/1, acquire some knowledge and understanding under Table A-III/2 of the STCW Code that are covered by this program under Annex A2.**

PI.5.3.2.1 Maintain a safe engineering watch

PI.5.3.2.2 Use English in written and oral form

PI.5.3.2.3 Use internal communication system

PI.5.3.2.4 Operation main and auxiliary machineries and associated control systems

PI.5.3.2.5 Operation fuel, lubrication, ballast, and other pumping systems and associated control systems

PI.5.3.2.6 Operate electrical, electronic, and control system

PI.5.3.2.7 Maintenance and repair of the electrical, electronic equipment and control system

PI.5.3.2.8 Use of appropriate hand tools, machine tools, and measuring instruments for fabrication and repair onboard

PI.5.3.2.9 Maintenance and repair of shipboard machinery and equipment



**Common to the horizontal type as defined in CMO No. 46 s.2012**

**PO-5.4.1 Demonstrate service orientation in one's profession.**

PI-5.4.1.1 Focus on anticipating, recognizing and meeting peoples' needs.

PI-5.4.1.2 Provide an opportunity to support others in their workplace and extend services to the community to improve lives of people.

PI-5.4.1.3 Develop serve-first mindset and service orientation crucial to transform a more inclusive environment.

**PO-5.4.2 Demonstrate ability to engage in various types of employment, development activities, and public discourses, particularly in response to the needs of the community one serves.**

PI-5.4.2.1 Ability to recognize, participate, and involve in different community extension services.

PI-5.4.2.2 Act in recognition of professional, social, and ethical responsibility through various engagement in different civic activities.

**PO-5.4.3 Demonstrate support “national, regional, and local development plans” of the country through participation in the generation of new knowledge or in research and development projects.**

PI-5.4.3.1 Provide a meaningful experience in research and development that are relevant and inclusive.

PI-5.4.3.2 Develop ability to recognize, formulate, and solve issues and problems in the areas of content knowledge and pedagogy.

**ADMISSION AND RETENTION POLICY**

**I. Student General Admission Requirements:**

LPU-B shall only accept students based on their respective carrying capacities, considering the number of facilities and equipment they own and faculty to student ratio. Students intending to enroll in the BSMT or BSMarE program shall comply with the minimum requirements for admission as follows:

**1. Academic Qualifications:**

- a. Senior High School graduate
- b. Students who graduated in High School on or before June 2016.

**2. Student Admission**

The following shall be eligible for admission to the BSMT and BSMarE programs:

- a. A student who graduated from the secondary level of education, subject to satisfaction of the following requirements of the admitting institution:
  - IQ Test
  - Aptitude Test
  - Personality Test
  - Math, Science and English Tests
  - Physical and medical fitness test, pursuant to Regulation 1/9of the STCW Convention 1978, as amended, to be conducted by a DOH accredited Medical Practitioner

- b. A student who is transferring from an authorized maritime higher education institution, subject to completion/satisfaction of Physical and medical fitness test, pursuant to Regulation 1/9 of the STCW Convention 1978, as amended, to be conducted by a DOH accredited Medical Practitioner.
- c. A student who is transferring from a maritime higher education institution whose programs are subjected to closure proceedings or are not authorized to be offered to a recognized MHEI, subject to completion/satisfaction of the following requirements:
  - Physical and medical fitness test, pursuant to Regulation 1/9 of the STCW Convention 1978, as amended, to be conducted by a DOH accredited Medical Practitioner; - adopt PEME format.
  - Pass the written and practical assessment of prior learning (professional courses); retake failed courses in written and practical assessment.
- d. A student who is transferring from an authorized maritime higher education institution whose admission standards require new entrant on the First Year Level only, shall abide by the institution's admission policy; and
- e. A student coming from outside the country must be evaluated in accordance with existing statutory and regulatory requirements prior to admission.

### **3. Physical and medical fitness requirements**

In compliance with Regulation 1/9; Section A-1/9 of the STCW Convention, 1978, as amended, students enrolling in the BSMT and/or BSMarE program shall satisfy the following criteria to be considered physically and medically fit:

- a. Has the physical capability to fulfil all the requirements of the basic training as required by Section A-VI/I, paragraph 2 of the STCW code.
- b. Demonstrates adequate hearing and speech to communicate effectively and detect any audible alarms.
- c. Has no medical condition, disorder or impairment that will prevent the effective and safe conduct of their routine and emergency duties on board the ship.
- d. not suffering from any medical condition likely to be aggravated by service at sea or to render the student unfit for such service;
- e. Adheres to the minimum in-service eyesight standards set out in Table A-1/9.
- f. Must have a General Weighted Average Grade of 85% for all subjects.
- g. Must submit a Certificate of Good Moral Character.
- h. Must pass the admission test with a Stanine 3 result. In case the result is below the minimum required stanine level, must satisfactorily pass the interview with the Dean.

## **II. Student General Retention Requirements**

1. A student who qualifies for enrollment shall be eligible to stay for the entire period for which he/she is expected to complete his/her program of study in the institution, subject to compliance with retention policies of the institution, without prejudice to his/her right to transfer to institutions in accordance with the existing rules and regulations of the Commission, except in the following cases:
  - a. academic delinquency
  - b. violation of rules and regulations of the institution
  - c. failure to settle due tuition and other school fees, and other obligations.
  - d. sickness or disease that would prevent the student to handle the pressures of schoolwork or his continued presence thereat would be deleterious to other members of the academic community; and
  - e. the closure of a program by the institution, or the closure of the institution itself.

2. Student Requirements:
  - a. Must have a general weighted average of (GWA) 2.50 in previous semester.
  - b. Must have passed at least 90% of the subjects enrolled in the previous semester, otherwise the student shall be subject to de-loading as per institutional policy.
  - c. Must pass the Program Year Level Assessment after the 1<sup>st</sup> and 2<sup>nd</sup> year level to ensure the attainment of the program outcomes. Any student who fails in the Year Level Assessment is required to undertake an Enhancement Program on the failed courses.
  - d. Must pass the Exit Competency Assessment after the 3<sup>rd</sup> year level to determine the achievement of the required competencies after completion of the 3 years Classroom Instructions.
  - e. Must finish the BSMT and BSMARE program within 6 years after completion of academic requirements. Otherwise, the student shall take remedial programs (for enrollees from 2022).
3. In the case of transfer of a student, strict observance of the provisions under Sections 95 and 96 of CMO 40, series of 2008. 38.4
4. The OBT shall not be considered as substitute to the one-year residency requirement in an MHEI for graduation.

### **REQUIREMENTS FOR GRADING**

As per Section 22 of CHED MEMORANDUM ORDER (CMO) No. 20 Series of 2015 which contains the Consolidated Policies, Standards and Guidelines for the Bachelor of Science in Marine Transportation (BSMT) and BSMarE programs, the grading system for a student in curricular or component courses shall strictly comply with the conditions and requirements as follows:

1. No provisional, conditional, or temporary final grade for any curricular or component course shall be given to a student.
2. In case as student fails to take a final examination or submit an academic requirement of a course and that his/her scholastic performamnce is not sufficient to merit a final passing grade, an institution may, consistent with its academic policies, give the student a final grade which does not earn any academic credit nor indicate failure such an "NC" for "No Credit" or "NG" for "No Grade". Such a grade is permanent and cannot be subsequently changed. Provided however, that where the failure to take the final examination, or to submit the academic requirements, is due to excusable grounds, such as sickness, emergency, or accident, the student may be given an incomplete mark or "INC". provided further, that the institution allows special or completion examinations, or additional time for compliance of the requirements. In no case shall an incomplete or "INC" mark remain for more than one (1) academic year.
3. The passing standard shall be the grade of 50%. However, the institution may raise the passing standard. To get the percentile grade, the number of correct answers called raw score shall be divided by the total number of test points and multiplied by 100.

In view of the above premise, the academy strictly implements the following range of percentage marks and their corresponding equivalents.

## Grading System

For PURE LECTURE

### A. LECTURE

#### Midterm Grade

|                            |               |
|----------------------------|---------------|
| Prelim Examination         | - 30%         |
| Class Performance          | - 30%         |
| Midterm Examination        | - 40%         |
| <b>Midterm Grade Total</b> | <b>- 100%</b> |

#### Final Grade

|                          |               |
|--------------------------|---------------|
| Midterm Grade            | - 40%         |
| Class Performance        | - 20%         |
| Final Examination        | - 40%         |
| <b>Final Grade Total</b> | <b>- 100%</b> |

#### Components of Class Performance:

- Formative Assessment (Short Quiz, Oral Recitation) - 30%
  - Graded Activities (Reporting, Research, Project Works, Assignments, Seatwork, Practical Activities) - 70%
- Total:** - 100%

#### Summative Assessment:

1. Prelim
2. Midterm
3. Final

For PURE LABORATORY

### A. LABORATORY

#### Midterm Grade

|                            |               |
|----------------------------|---------------|
| Prelim Examination         | - 30%         |
| Class Performance          | - 30%         |
| Midterm Examination        | - 40%         |
| <b>Midterm Grade Total</b> | <b>- 100%</b> |

#### Final Grade

|                          |               |
|--------------------------|---------------|
| Midterm Grade            | - 40%         |
| Class Performance        | - 20%         |
| Final Examination        | - 40%         |
| <b>Final Grade Total</b> | <b>- 100%</b> |

**Components of Class Performance:**

- Formative Assessment (Oral Recitation) - 30%
- Graded Activities (Practical Activities) - 70%
- Total:** - 100%

**Summative Assessment:**

1. Prelim
2. Midterm
3. Final

**For Combination of Lecture and Laboratory:****A. Lecture**

Lecture grade is composed of 2 major examinations (Midterm and Final Exam) and Class performance.

**Components of Class Performance:**

- Formative Assessment (Short Quiz, Oral Recitation) - 30%
- Graded Activities (Reporting, Research, Project Works, Assignments, Seatwork, Practical Activities) - 70%
- Total:** - 100%

**Midterm Performance Grade:**

|   |        |
|---|--------|
| Midterm Examination                         | - 40%  |
| <u>Class Performance (Start to Midterm)</u> | - 60%  |
| <b>Total</b>                                | - 100% |

**Final Performance Grade:**

|   |        |
|---|--------|
| Final Examination                           | - 40%  |
| <u>Class Performance (Midterm to Final)</u> | - 60%  |
| <b>Total</b>                                | - 100% |

**Final Grade**

|                                |        |
|--------------------------------|--------|
| Midterm Performance Grade      | - 50%  |
| <u>Final Performance Grade</u> | - 50%  |
| <b>Total</b>                   | - 100% |

## **B. With Laboratory/Skills**

Laboratory grade is composed of 2 major examinations (Midterm and Final Assessment) and Class performance.

### **Components of Class Performance:**

- Graded Activities (Practical Exercises) - 100%

### **Midterm Performance Grade:**

|   |               |
|---|---------------|
| Midterm Practical Assessment                | - 40%         |
| <u>Class Performance (Start to Midterm)</u> | <u>- 60%</u>  |
| <b>Total</b>                                | <b>- 100%</b> |

### **Final Performance Grade:**

|   |               |
|---|---------------|
| Final Examination                           | - 40%         |
| <u>Class Performance (Midterm to Final)</u> | <u>- 60%</u>  |
| <b>Total</b>                                | <b>- 100%</b> |

### **Final Grade**

|                                |               |
|--------------------------------|---------------|
| Midterm Performance Grade      | - 50%         |
| <u>Final Performance Grade</u> | <u>- 50%</u>  |
| <b>Total</b>                   | <b>- 100%</b> |

## **C. Overall Final Grade: Combination of Lecture and Laboratory**

|                                |               |
|--------------------------------|---------------|
| <b>Lecture Grade</b>           | - 40%         |
| <u><b>Laboratory Grade</b></u> | <u>- 60%</u>  |
| <b>Total</b>                   | <b>- 100%</b> |

**PROGRAM OF STUDY (3-1)**  
**LYCEUM INTERNATIONAL MARITIME ACADEMY**  
**BACHELOR OF SCIENCE IN MARINE ENGINEERING**  
**Effectivity: Academic Year 2023-2024**

**First Year Level -1<sup>st</sup> Semester**

| Course Code      |   | Course Descriptive Title          | Contact Hours |     | Units       | Pre Requisite/s | Co-Requisite/s |
|------------------|---|-----------------------------------|---------------|-----|-------------|-----------------|----------------|
|                  |   |                                   | Lec           | Lab |             |                 |                |
| NGEC             | 4 | Mathematics in the Modern World   | 3             | 0   | 3           | None            | None           |
| NGEC             | 5 | Purposive Communication           | 3             | 0   | 3           | None            | None           |
| NGEC             | 9 | Math, Science and Technology      | 3             | 0   | 3           | None            | None           |
| MACH             | 1 | Hand and Measuring Tools          | 1             | 3   | 2           | None            | None           |
| ELECTRO          | 1 | Basic Electricity                 | 3             | 3   | 4           | None            | None           |
| DRAW             |   | Maritime Drawing and Diagrams     | 0             | 3   | 1           | None            | None           |
| EMAT             |   | Engineering Materials             | 4             | 0   | 4           | None            | None           |
| NSTP             | 1 | National Service Training Program | 3             | 0   | 3           | None            | None           |
| PATHFIT 1        |   | Movement Competency Training      | 1             | 3   | 2           | None            | None           |
| GYMATHICS        | 1 | Basic Gymathics                   | 3             | 0   | 3           | None            | None           |
| BSC              | 1 | Being Skills Course 1             | 1.5           | 0   | 1.5         | None            | None           |
| <b>Sub-Total</b> |   |                                   | 25.5          | 12  | <b>29.5</b> |                 |                |
| <b>Total</b>     |   |                                   | <b>37.5</b>   |     | <b>5</b>    |                 |                |

**First Year – 2<sup>nd</sup> Semester**

| Course Code |   | Course Descriptive Title  | Contact Hours |     | Units | Pre Requisite/s | Co-Requisite/s |
|-------------|---|---|---------------|-----|-------|-----------------|----------------|
|             |   |   | Lec           | Lab |       |                 |                |
| ELECTRO     | 2 | Basic Electronics   | 2             | 3   | 3     | ELECTRO 1       | None           |
| ICHEM       |   | Industrial Chemistry and Tribology                              | 2             | 3   | 3     | None            | None           |
| MECH        |   | Mechanics and Hydromechanics                                    | 3             | 0   | 3     | NGEC 9          | None           |
| THERMO      |   | Thermodynamics  | 3             | 0   | 3     | NGEC 9          | None           |
| MACH        | 2 | Machining Tools   | 1             | 3   | 2     | EMAT, MACH 1    | None           |
| ICT         |   | Software Applications and Network System used in Seagoing Ships | 1             | 3   | 2     | None            | None           |
| NSTP        | 2 | National Service Training Program 2                             | 3             | 0   | 3     | None            | None           |
| PATHFIT     | 2 | Exercise-Based Fitness Activities                               | 1             | 3   | 2     | PATHFIT 1       | None           |

| Course Code      |   | Course Descriptive Title   | Contact Hours |     | Units       | Pre Requisite/s | Co-Requisite/s |
|------------------|---|----------------------------|---------------|-----|-------------|-----------------|----------------|
|                  |   |                            | Lec           | Lab |             |                 |                |
| GYMATHICS        | 2 | Advance Gymathics          | 3             | 0   | 3           | Gymathics 1     | None           |
| EPC              |   | English Proficiency Course | 3             | 0   | 3           | None            | None           |
| BSC              | 2 | Being Skills Course 2      | 1.5           | 0   | 1.5         | None            |                |
| <b>Sub-Total</b> |   |                            | 23.5          | 15  | <b>28.5</b> |                 |                |
| <b>Total</b>     |   |                            | <b>38.5</b>   |     |             |                 |                |

**Second Year – 1<sup>st</sup> Semester**

| Course Code      |   | Course Descriptive Title                          | Contact Hours |     | Units       | Pre Requisite/s                           | Co-Requisite/s |
|------------------|---|---|---------------|-----|-------------|---|----------------|
|                  |   |   | Lec           | Lab |             |   |                |
| NGEC             | 6 | Art Appreciation                                  | 3             | 0   | 3           | None                                      | None           |
| MACH             | 3 | Gas and Electric Welding                          | 1             | 3   | 2           | MACH 1<br>EMAT                            | None           |
| ELECTRO          | 3 | Marine Electricity and Electrical Maintenance     | 3             | 6   | 5           | ELECTRO 2                                 | None           |
| AUTO             | 1 | Basic Control Engineering                         | 3             | 3   | 4           | ELECTRO 2, MECH                           | None           |
| AUX MACH         | 1 | Auxiliary Machinery 1                             | 3             | 6   | 5           | THERMO<br>ICHEM<br>MECH<br>MDRAW<br>MACH1 | None           |
| MGMT             |   | Leadership and Teamwork                           | 3             | 0   | 3           | None                                      | None           |
| MARENV           |   | Protection of the Marine Environment              | 3             | 0   | 3           | None                                      | None           |
| PATHFIT          | 3 | Outdoor Activities (Basic Swimming)               | 1             | 3   | 2           | PATHFIT 2                                 | None           |
| MTP              | 1 | Maritime Training Program 1 (Technical Writing 1) | 3             | 0   | 3           | None                                      | None           |
| <b>Sub-Total</b> |   |   | 20.0          | 18  | <b>30.0</b> |   |                |
| <b>Total</b>     |   |   | <b>38.0</b>   |     |             |   |                |



**Second Year – 2<sup>nd</sup> Semester**

| Course Code      |   | Course Descriptive Title                          | Contact Hours |     | Units       | Pre Requisite/s        | Co-Requisite/s |
|------------------|---|---|---------------|-----|-------------|------------------------|----------------|
|                  |   |   | Lec           | Lab |             |                        |                |
| NGEC             | 1 | Understanding the Self                            | 3             | 0   | 3           | None                   | None           |
| NGEC             | 7 | Science, Technology, and Society                  | 3             | 0   | 3           | None                   | None           |
| NGEC             | 8 | Maritime Ethics                                   | 3             | 0   | 3           | None                   | None           |
| AUTO             | 2 | Marine Automation                                 | 3             | 3   | 4           | AUTO 1                 | None           |
| AUX MACH         | 2 | Auxiliary Machinery 2                             | 4             | 3   | 5           | AUXMACH 1<br>ELECTRO 3 | None           |
| NAV ARCH         |   | Naval Architecture for Marine Engineering         | 2             | 0   | 2           | NGEC 9                 | None           |
| MARLAW           |   | Maritime Law                                      | 4             | 0   | 4           | None                   | None           |
| PATHFIT          | 4 | Outdoor Activities (Advance Swimming)             | 1             | 3   | 2           | PATHFIT 3              | None           |
| MTP              | 2 | Maritime Training Program 2 (Technical Writing 2) | 3             | 0   | 3           | None                   | None           |
| <b>Sub-Total</b> |   |   | 25.0          | 9   | <b>28.0</b> |                        |                |
| <b>Total</b>     |   |   | <b>34.0</b>   |     |             |                        |                |

**Second Year – Summer**

| Course Code      |  | Course Descriptive Title   | Contact Hours |     | Units    | Pre Requisite/s | Co-Requisite/s |
|------------------|--|--|---------------|-----|----------|-----------------|----------------|
|                  |  |  | Lec           | Lab |          |                 |                |
| BT               |  | Basic Training   | 0             | 0   | 0        | None            | None           |
| SDSD             |  | Ship Security Awareness Training and Seafarers with Designated Security Duties | 0             | 0   | 0        | None            | None           |
| <b>Sub-Total</b> |  |  | 0             | 0   | <b>0</b> |                 |                |
| <b>Total</b>     |  |  | <b>0</b>      |     |          |                 |                |

**Third Year – 1<sup>st</sup> Semester**

| Course Code      |   | Course Descriptive Title                       | Contact Hours |     | Units     | Pre Requisite/s           | Co-Requisite/s |
|------------------|---|--|---------------|-----|-----------|---------------------------|----------------|
|                  |   |  | Lec           | Lab |           |                           |                |
| NGEC             | 2 | Readings in the Philippine History             | 3             | 0   | 3         | None                      | None           |
| NGEC             | 3 | The Contemporary World                         | 3             | 0   | 3         | None                      | None           |
| PPD              |   | Power Plant Diesel                             | 4             | 3   | 5         | THERMO, AUXMACH 1, AUTO 2 | None           |
| PPS              |   | Power Plant Steam                              | 5             | 3   | 6         |                           | None           |
| PASGT            |   | Propulsion Ancillary System and Gas Turbine    | 2             | 3   | 3         |                           | None           |
| FL               |   | Foreign Language                               | 3             | 0   | 3         | None                      | None           |
| MTP              | 3 | Maritime Training Program 3 (Entrepreneurship) | 3             | 0   | 3         | None                      | None           |
| MRC              | 1 | Maritime Review Course 1                       | 3             | 0   | 3         | None                      | None           |
| <b>Sub-Total</b> |   |  | 23            | 9   | <b>29</b> |                           |                |
| <b>Total</b>     |   |  | <b>32</b>     |     |           |                           |                |

**Third Year – 2<sup>nd</sup> Semester**

| Course Code |    | Course Descriptive Title             | Contact Hours |     | Units | Pre Requisite/s                                      | Co-Requisite/s |
|-------------|----|--------------------------------------|---------------|-----|-------|--|----------------|
|             |    |                                      | Lec           | Lab |       |  |                |
| NGEC        | 10 | Social Sciences and Philosophy       | 3             | 0   | 3     | None   | None           |
| NGEC        | 11 | Arts and Humanities                  | 3             | 0   | 3     | None   | None           |
| RIZAL       |    | The Life and Works of Dr. Jose Rizal | 3             | 0   | 3     | None   | None           |
| MAINT       |    | Maintenance and Repair               | 2             | 3   | 3     | AUXMACH 2, PPD, PPS, PASGT, MACH 2, MACH 3, NAV ARCH | None           |

| Course Code      |   | Course Descriptive Title                      | Contact Hours |     | Units     | Pre Requisite/s                                   | Co-Requisite/s |
|------------------|---|---|---------------|-----|-----------|---|----------------|
|                  |   |   | Lec           | Lab |           |   |                |
| EWATCH           |   | Engine Watch Keeping                          | 3             | 3   | 4         | AUXMACH 1, MARLAW, MARENIV, PPD, PPS, PASGT, MGMT | None           |
| MTP              | 4 | Maritime Training Program 4 (OBT Preparation) | 3             | 0   | 3         | None  | None           |
| MRC              | 2 | Maritime Review Course 2                      | 3             | 0   | 3         | COMPRE 2  | None           |
| <b>Sub-Total</b> |   |   | 24            | 6   | <b>22</b> |   |                |
| <b>Total</b>     |   |   | <b>30</b>     |     |           |   |                |

#### FOURTH YEAR

#### Pre-Requisite for Onboard Training (OBT)

| Course Code      | No . | Course Descriptive Title   | Contact Hours |     | Units | Pre - Requisite/s | Co-Requisite/s |
|------------------|------|--|---------------|-----|-------|-------------------|----------------|
|                  |      |  | Lec           | Lab |       |                   |                |
| COMPRE           |      | Exit Competency Assessment (Comprehensive Exam and Practical Assessment) | 0             | 0   | 0     |                   |                |
| OBT              |      | Onboard Training   | 0             | 0   | 40    | BT, SDSD          | None           |
| SBTE             |      | Shipboard Training Enrichment  | 0             | 0   | 0     | None              | None           |
| <b>Sub-Total</b> |      |  |               |     | N/A   |                   |                |
| <b>Total</b>     |      |  | N/A           |     |       |                   |                |

| Summary of Courses        | Units      |
|---------------------------|------------|
| General Education Courses | 50         |
| Professional Courses      | 85         |
| Enhancement Courses       | 33         |
| Shipboard Training        | 40         |
| <b>Total</b>              | <b>208</b> |

**PROGRAM OF STUDY (3-1)**  
**LYCEUM INTERNATIONAL MARITIME ACADEMY**  
**BACHELOR OF SCIENCE IN MARINE TRANSPORTATION**  
**EFFECTIVITY: ACADEMIC YEAR 2023-2024**

**First Year Level -1<sup>st</sup> Semester**

| Course Code      | No. | Course Descriptive Title   | Contact Hours |     | Units       | Pre Requisite/s | Co-Requisite/s |
|------------------|-----|--|---------------|-----|-------------|-----------------|----------------|
|                  |     |  | Lec           | Lab |             |                 |                |
| NGEC             | 4   | Mathematics in the Modern World                                    | 3             | 0   | 3           | None            | None           |
| NGEC             | 5   | Purposive Communication  | 3             | 0   | 3           | None            | None           |
| NGEC             | 9   | Math, Sciences, and Technology                                     | 3             | 0   | 3           | None            | None           |
| NAV              | 1   | Navigational Instruments with Compasses                            | 3             | 3   | 4           | None            | None           |
| SEAM             | 1   | Ships, Ship Routines and Ship Construction                         | 3             | 3   | 4           | None            | None           |
| ICT              |     | Software Applications and Network Systems used in Seagoing Ships   | 1             | 3   | 2           | None            | None           |
| PATHFIT          | 1   | Movement Competency Training                                       | 1             | 3   | 2           | None            | None           |
| NSTP-CWTS        | 1   | National Service Training Program-Civic Welfare Training Service 1 | 3             | 0   | 3           | None            | None           |
| GMATHICS         | 1   | Basic Gymathics  | 3             | 0   | 3           | None            | None           |
| BSC              | 1   | Being Skills Course 1  | 1.5           | 0   | 1.5         | None            | None           |
| <b>Sub-Total</b> |     |  | 24.5          | 12  | <b>28.5</b> |                 |                |
| <b>Total</b>     |     |  | <b>36.5</b>   |     |             |                 |                |

**First Year – 2<sup>nd</sup> Semester**

| Course Code | No. | Course Descriptive Title             | Contact Hours |     | Units | Pre Requisite/s | Co-Requisite/s |
|-------------|-----|--------------------------------------|---------------|-----|-------|-----------------|----------------|
|             |     |                                      | Lec           | Lab |       |                 |                |
| MET-O       |     | Meteorology and Oceanography         | 5             | 0   | 5     | None            | None           |
| NAV         | 2   | Terrestrial and Coastal Navigation 1 | 3             | 3   | 4     | NAV 1           | None           |
| SEAM        | 2   | Trim, Stability, and Stress          | 3             | 0   | 3     | SEAM 1          | None           |
| COLREGS     |     | Collision Regulations                | 3             | 0   | 3     | SEAM 1          | None           |
| PATHFIT     | 2   | Exercise-Based Fitness Activities    | 1             | 3   | 2     | PATHFIT 1       | None           |
|             | 2   | National Service                     | 3             | 0   | 3     | NSTP 1          | None           |

| Course Code      | No. | Course Descriptive Title                          | Contact Hours |     | Units       | Pre Requisite/s | Co-Requisite/s |
|------------------|-----|---|---------------|-----|-------------|-----------------|----------------|
|                  |     |   | Lec           | Lab |             |                 |                |
| NSTP-CWTS        |     | Training Program-Civic Welfare Training Service 2 |               |     |             |                 |                |
| GMATHICS         | 2   | Advance Gymathics                                 | 3             | 0   | 3           | GMATHICS 1      | None           |
| BSC              | 2   | Being Skills Course 2                             | 1.5           | 0   | 1.5         | None            | None           |
| EPC              |     | English Proficiency Course                        | 3             | 0   | 3           | None            | None           |
| <b>Sub-Total</b> |     |   | 25.5          | 6   | <b>27.5</b> |                 |                |
| <b>Total</b>     |     |   | <b>31.5</b>   |     |             |                 |                |

**Second Year – 1<sup>st</sup> Semester**

| Course Code | No. | Course Descriptive Title             | Contact Hours |     | Units | Pre Requisite/s | Co-Requisite/s |
|-------------|-----|--------------------------------------|---------------|-----|-------|-----------------|----------------|
|             |     |                                      | Lec           | Lab |       |                 |                |
| NGEC        | 6   | Art Appreciation                     | 3             | 0   | 3     | None            | None           |
| NAV         | 3   | Terrestrial and Coastal Navigation 2 | 3             | 6   | 5     | NAV 2           | None           |
| NAV         | 5   | Operational Use of RADAR and ARPA    | 2             | 3   | 3     | COLREGS         | None           |
| SEAM        | 3   | Cargo Handling and Stowage (NDG)     | 3             | 0   | 3     | SEAM 2          | None           |
| SEAM        | 4   | CHS: Dangerous Goods and Inspection  | 3             | 0   | 3     | SEAM 2          | None           |
| MGMT        |     | Leadership and Teamwork              | 3             | 0   | 3     | None            | None           |
| MAR ENV     |     | Protection of the Marine Environment | 3             | 0   | 3     | None            | None           |
| PATHFIT     | 3   | Outdoor Activities (Basic Swimming)  | 1             | 3   | 2     | PATHFIT 2       | None           |

| Course Code      | No. | Course Descriptive Title                          | Contact Hours |     | Units     | Pre Requisite/s | Co-Requisite/s |
|------------------|-----|---|---------------|-----|-----------|-----------------|----------------|
|                  |     |   | Lec           | Lab |           |                 |                |
| MTP              | 1   | Maritime Training Program 1 (Technical Writing 1) | 3             | 0   | 3         | None            | None           |
| <b>Sub-Total</b> |     |   | 24            | 12  | <b>28</b> |                 |                |
| <b>Total</b>     |     |   | <b>36</b>     |     |           |                 |                |

**Second Year – 2<sup>nd</sup> Semester**

| Course Code      | No | Course Descriptive Title                       | Contact Hours |     | Units     | Pre Requisite/s | Co-Requisite/s |
|------------------|----|--|---------------|-----|-----------|-----------------|----------------|
|                  |    |  | Lec           | Lab |           |                 |                |
| NGEC             | 1  | Understanding the Self                         | 3             | 0   | 3         | None            | None           |
| NGEC             | 7  | Science, Technology, and Society               | 3             | 0   | 3         | None            | None           |
| NGEC             | 8  | Maritime Ethics                                | 3             | 0   | 3         | None            | None           |
| MARPOWER         |    | Basic Marine Engineering                       | 3             | 0   | 3         | None            | None           |
| NAV              | 4  | Celestial Navigation                           | 2             | 3   | 3         | NAV 3           | None           |
| NAV              | 6  | Operational Use of ECDIS                       | 2             | 3   | 3         | Nav 5           | None           |
| SEAM             | 6  | Advance Trim, Stability, and Stress            | 2             | 3   | 3         | SEAM 2          | None           |
| PATHFIT          | 4  | Outdoor Activities (Advance Swimming)          | 1             | 3   | 2         | PATHFIT 3       | None           |
| MTP              | 3  | Maritime Training Program 3 (Entrepreneurship) | 3             | 0   | 3         | None            | None           |
| <b>Sub-Total</b> |    |  | 22            | 12  | <b>26</b> |                 |                |
| <b>Total</b>     |    |  | <b>34</b>     |     |           |                 |                |

**Second Year – Summer**

| Course Code      | No. | Course Descriptive Title   | Contact Hours |     | Units    | Pre Requisite/s | Co-Requisite/s |
|------------------|-----|--|---------------|-----|----------|-----------------|----------------|
|                  |     |  | Lec           | Lab |          |                 |                |
| BT               |     | Basic Training   | 0             | 0   | 0        | None            | None           |
| SDSD             |     | Ship Security Awareness Training and Seafarers with Designated Security Duty | 0             | 0   | 0        | None            | None           |
| <b>Sub-Total</b> |     |  | 0             | 0   | <b>0</b> |                 |                |
| <b>Total</b>     |     |  | <b>0</b>      |     |          |                 |                |

**Third Year – 1<sup>st</sup> Semester**

| Course Code      | No. | Course Descriptive Title                          | Contact Hours |     | Units     | Pre Requisite/s | Co-Requisite/s |
|------------------|-----|---|---------------|-----|-----------|-----------------|----------------|
|                  |     |   | Lec           | Lab |           |                 |                |
| NGEC             | 3   | The Contemporary World                            | 3             | 0   | 3         | None            | None           |
| NGEC             | 2   | Readings in Philippine History                    | 3             | 0   | 3         | None            | None           |
| MARCOM           |     | Maritime Communications                           | 3             | 3   | 4         | None            | None           |
| SEAM             | 5   | Ship Handling and Maneuvering                     | 2             | 3   | 3         | COLREGS         | None           |
| MARLAW           |     | Maritime Law                                      | 4             | 0   | 4         | None            | None           |
| FL               |     | Foreign Language                                  | 3             | 0   | 3         | None            | None           |
| MTP              | 2   | Maritime Training Program 2 (Technical Writing 2) | 3             | 0   | 3         | MTP1            | None           |
| MCR              | 1   | Maritime Comprehensive Review 1                   | 3             | 0   | 3         | None            | None           |
| <b>Sub-Total</b> |     |   | 24            | 6   | <b>26</b> |                 |                |
| <b>Total</b>     |     |   | <b>30</b>     |     |           |                 |                |

**Third Year – 2nd Semester**

| Course Code      | No . | Course Descriptive Title                          | Contact Hours |     | Units     | Pre Requisite/s | Co-Requisite/s |
|------------------|------|---|---------------|-----|-----------|-----------------|----------------|
|                  |      |   | Lec           | Lab |           |                 |                |
| NGEC             | 10   | Social Sciences and Philosophy                    | 3             | 0   | 3         | None            | None           |
| NGEC             | 11   | Arts and Humanities                               | 3             | 0   | 3         | None            | None           |
| RIZAL            |      | The Life and Works of Dr. Jose Rizal              | 3             | 0   | 3         | None            | None           |
| DECK WATCH       |      | Deck Watchkeeping with Bridge Resource Management | 2             | 6   | 4         | COLREGS , MGMT  | NAV 7          |
| NAV              | 7    | Voyage Planning                                   | 2             | 3   | 3         | NAV 6           | None           |
| MTP              | 4    | Maritime Training Program 4 (OBT Preparation)     | 3             | 0   | 3         | None            | None           |
| MCR              | 2    | Maritime Comprehensive Review 2                   | 3             | 0   | 3         | MCR 1           | None           |
| <b>Sub-Total</b> |      |   | 19            | 9   | <b>22</b> |                 |                |
| <b>Total</b>     |      |   | <b>28</b>     |     |           |                 |                |



**FOURTH YEAR**  
**Pre-Requisite for Onboard Training (OBT)**

| Course Code      | No . | Course Descriptive Title   | Contact Hours |     | Units | Pre - Requisite/ s | Co- Requisite/ s |
|------------------|------|--|---------------|-----|-------|--------------------|------------------|
|                  |      |  | Lec           | Lab |       |                    |                  |
| COMPRE           |      | Exit Competency Assessment (Comprehensive Exam and Practical Assessment) | 0             | 0   | 0     | None               | None             |
| OBT              |      | Onboard Training   | 0             | 0   | 40    | BT, SDSD           | None             |
| SBTE             |      | Shipboard Training Enrichment  | 0             | 0   | 0     | None               | None             |
| <b>Sub-Total</b> |      |  |               |     | 40    |                    |                  |
| <b>Total</b>     |      |  | None          |     |       |                    |                  |

| Summary of Courses               | Units      |
|----------------------------------|------------|
| <b>General Education Courses</b> | <b>50</b>  |
| <b>Professional Courses</b>      | <b>75</b>  |
| <b>Onboard Training</b>          | <b>40</b>  |
| <b>Enhancement Program</b>       | <b>33</b>  |
| <b>Total</b>                     | <b>198</b> |

**Course Description of Professional Subjects  
Bachelor of Science in Marine Engineering (3-1)  
Academic Year 2023-2024**

**First Year  
First Semester**

**Course Code** : Mach 1  
**Course Title** : Hand and Measuring Tools  
**Course Credit** : 2 units  
**Pre- requisites** : None  
**Course Description** :

The course includes the safe working practices, hand tools and measuring equipment for dismantling, maintenance, repair and re-assembly of shipboard plant & equipment, fabrication and repair.

**Course Code** : Electro 1  
**Course Title** : Basic Electricity  
**Course Credit** : 4 units  
**Pre- requisites** : None  
**Course Description** :

The course deals with the principles of different electrical equipment. It includes primarily the study of electron theory, Ohm's Law, Power Law & Kirchhoff's Law, fundamentals of AC and Circuit arrangements. It also deals with magnetism, electromagnetism and electromagnetic induction, power supplies, conductors, batteries and electrical measuring instruments.

**Course Code** : Draw  
**Course Title** : Maritime Drawing and Diagrams  
**Course Credit** : 1 unit  
**Pre- requisites** : None  
**Course Description:**

The course includes lettering types of drawing, draw line work, pictorial projection, development of drawing, identify and draw or sketch screw threads and fasteners, locking and retaining devices, riveted type fastening, sketch welded connections, dimensioning, piping systems, sketching and schematic diagram of piping of piping diagrams.

**Course Code** : EMAT  
**Course Title** : Engineering Materials  
**Course Credit** : 4 units  
**Pre- requisites** : None  
**Course Description** :

The course includes the properties and uses, basic metallurgy and processes of metals. It also deals with the different classification of metals and non-metals and how these metals are heat treated the different stresses that affect the material to avoid vibrations and the different adhesive and bonding applied when joining.

First Year  
Second Semester

**Course Code** : **Electro 2**  
**Course Title** : **Basic Electronics**  
**Course Credit** : 3 units  
**Pre- requisites** : Electro 1  
**Course Description** :

The course focuses on the study of principles of configuration and operation of electrical equipment such as generators, governors, motors, transformers and AC power distribution system. It reviews magnetism and electromagnetic induction and other aspects of electronics common to all types of ships.

**Course Code** : **IChem**  
**Course Title** : **Industrial Chemistry and Tribology**  
**Course Credit** : 3 units  
**Pre- requisites** : None  
**Course Description** :

The course includes Fundamentals of Industrial Chemistry and Fuel Oil and Lubricants. The course also includes how to perform water analysis and fuel oil analysis.

**Course Code** : **MECH**  
**Course Title** : **Mechanics and Hydromechanics**  
**Course Credit** : 3 units  
**Pre- requisites** : NGEN 9  
**Course Description** :

The course include balancing of forces and moments including strength and elastic deflection of engineering materials due to loads applied axially, in torsion, in bending, and in shear, combined stresses and principal stress. It also covers fluid properties, fluid statics, fluid dynamics, including pipe flow, and turbo machinery. Stresses the control volume approach.

**Course Code** : **Thermo**  
**Course Title** : **Thermodynamics**  
**Course Credit** : 3 units  
**Pre- requisites** : NGEN 9  
**Course Description** :

The course includes basic concepts in thermodynamics, forms of energy; properties of pure substances, phase diagrams & phase transitions. It deals also with work, heat, properties of substances and state equations, first law and second law of thermodynamics, mass & energy balances in open & closed systems, processes of ideal gas and vapors, including problem formulation, analytic, and computational solutions.

**Course Code** : **Mach 2**  
**Course Title** : **Machining Tools**  
**Course Credit** : 2 units  
**Pre- requisites** : EMAT and MACH 1  
**Course Description** :

The subject deals with the operation of lathe machine, milling machine, shaping machine and drilling machine. It covers the proper utilization, emphasizing dangerous practice in using that particular machines, problems encountered during the operations, and different safety precautions on handling the machines.

**Course Code** : ICT  
**Course Title** : **Software Applications and Network System used in Seagoing Ships**  
**Course Credit** : 2 units  
**Pre- requisites** : None

**Course Description:**

The course deals with the effective use of computer application for shipboard documents, evaluation of shipboard computer network in terms of modularity and expandability. It also deals with computer trouble shooting as per manufacturer's instructions. It also involves the use of specific onboard software for Planned Maintenance System, Spare-parts Control System, Bunkering Software, Fuel Consumption and Monitoring Software, and other deck related software.

**Second Year**  
**First Semester**

**Course Code** : **MACH 3**  
**Course Title** : **Gas and Electric Welding**  
**Course Credit** : 2 units  
**Pre- requisites** : MACH 1, EMAT

**Course Description:**

The course includes different types of ships, general knowledge on construction, working knowledge on stability and stress as well as stress table. A thorough discussion about the actions to be taken in case of partial loss on buoyancy and the fundamental of watertight integrity of the ship.

**Course Code** : **Electro 3**  
**Course Title** : **Marine Electricity and Electrical Maintenance**  
**Course Credit** : 5 units  
**Pre- requisites** : Electro 2

**Course Description:**

This course intends to provide the students with knowledge, skills and competence in the configuration, operation, maintenance and repairs of electrical /electronic equipment used onboard.

**Course Code** : **Auto 1**  
**Course Title** : **Basic Control Engineering**  
**Course Credit** : 4 units  
**Pre- requisites** : Electro 2, Mech

**Course Description** :

The subject deals with the basic configuration and operation principles of the following electrical, electronic and control equipment. It includes the characteristics of basic electronic circuit element, flow chart for automatic and control systems, functions, characteristics and features of control systems for machinery items, including main propulsion plant operation control and steam boiler automatic controls, various automatic control methodologies and characteristics, proportional-integral-derivative (PID) control characteristics and associated system devices for process control.

**Course Code** : **Aux Mach 1**  
**Course Title** : **Auxiliary Machinery 1**  
**Course Credit** : 5 units  
**Pre- requisites** : Thermo, IChem, Mech, MDraw, Mach1  
**Course Description** :

This subject deals with all the auxiliary machineries with the piping system and all the valves and fittings associated with it. It gives the students the specific knowledge on the basic principles and preparations necessary for the safe and efficient shipboard operation. Likewise, it gives them the basic idea on the common Auxiliary Machineries that they may be encountered on board the ship.

**Course Code** : **MGMT**  
**Course Title** : **Leadership and Teamwork**  
**Course Credit** : 3 units  
**Pre- requisites** :

**Course Description:**

Be capable of organizing and managing the crew for a safe and efficient operation of the ship. Be capable to chair meetings on board and implement shipboard training programs as required by international community (including Model Course 1. 39).

**Course Code** : **MAR ENV**  
**Course Title** : **Protection of the Marine Environment**  
**Course Credit** : 3 units  
**Pre- requisites** : None

**Course Description:**

The course includes topics such as Marine environment protection and prevention, International Convention for the prevention of Pollution from ships and the regularization which helps prevent marine pollution as per MARPOL 73/78. Regulations which involves ship construction and equipment requirement of the ships to attain the safest movement and handling of cargo such as oil, noxious liquid substances, and harmful substances in package form. Tackle the proper disposal of operational and domestic waste like oil, sewage and garbage and Emergency response of ships during oil spill.

**Second Year**  
**Second Semester**

**Course Code** : **Auto 2**  
**Course Title** : Marine Automation  
**Course Credit** : 4 units  
**Pre- requisites** : AUTO 1

**Course Description:**

The subject deals with the principles of operation and basic construction of machinery control system, instrumentation and control, including the protective devices, of main and auxiliary machineries for shipboard applications. It also deals with the design features and system configurations of automatic control equipment and safety devices of main propulsion engine, generator engine and distribution panel, steam boiler and other auxiliary machineries.

**Course Code** : **Aux Mach 2**  
**Course Title** : Auxiliary Machinery 2  
**Course Credit** : 5 units  
**Pre- requisites** : Aux Mach 1, Electro 3

**Course Description:**

The subject deals with the operation and maintenance of different auxiliary machinery such as steering gear, deck machinery, hull machinery & equipment, refrigerator plant and centrifugal oil purifiers.

**Course Code** : **NAV ARCH**  
**Course Title** : **Naval Architecture for Marine Engineering**  
**Course Credit** : 2 units  
**Pre- requisites** : NGEN 9

**Course Description:**

The course includes different types of ships, general knowledge on construction, working knowledge on stability and stress as well as stress table. A thorough discussion about the actions to be taken in case of partial loss on buoyancy and the fundamental of watertight integrity of the ship.

**Course Code** : **MARLAW**  
**Course Title** : **Maritime Law**  
**Course Credit** : 4  
**Pre- requisites** : None  
**Co-requisites** : None

**Course Description:**

This course is designed to develop basic understanding of students to the law of the sea that provides for the regulation, management and governance of ocean spaces. It introduces the study of the foundational principles of the law of the sea; critical overview of the 1982 United Nations Convention of the Law of the Sea; IMO conventions concerning safety of life at SEA, security and protection of the Marine Environment; International Maritime Law Embodied in International Agreements and Conventions and an analysis of subsequent developments, including bilateral, regional and global agreements that supplement the Convention.

**Third Year**  
**First Semester**

**Course Code** : **PPD**  
**Course Title** : **Power Plant Diesel**  
**Course Credit** : 5 units  
**Pre- requisites** : Thermo, Auxmach 1, Auto 2

**Course Description:**

The subject deals with the safe and efficient operation and maintenance of a marine steam plant. It covers the study of boilers, including the structures; mounting and their functions, construction, other components, procedures for operation, and boiler water testing and treatment.

**Course Code** : PPS  
**Course Title** : Power Plant Steam  
**Course Credit** : 6 units  
**Pre- requisites** : Thermo, Auxmach 1, Auto 2

**Course Description:**

The subject deals with the safe and efficient operation and maintenance of a marine steam plant. It covers the study of boilers, including the structures; mounting and their functions, construction, other components, procedures for operation, and boiler water testing and treatment.

**Course Code** : PASGT  
**Course Title** : Propulsion Ancillary System and Gas Turbine  
**Course Credit** : 3 units  
**Pre- requisites** : Thermo, Auxmach 1, Auto 2

**Course Description:**

The course includes the different classification of marine gas turbine, its principles and systems. It also deals with the principles of operation, watch keeping and trouble-shooting of diesel engine.

**Fourth Year**  
**Second Semester**

**Course Code** : MAINT  
**Course Title** : Maintenance and Repair  
**Course Credit** : 3 units  
**Pre- requisites** : Auxmach 2, PPD, PPS, PASGT, Mach 2, Mach 3, Nav Arch  
**Co-requisites** : None

**Course Description:**

The course includes the principles to be observed in the maintenance and repair of shipboard machinery and equipment, managing safe and effective maintenance and repair procedures and the operation of equipment and machinery.

**Course Code** : EWATCH  
**Course Title** : Engine Watch Keeping  
**Course Credit** : 4 units  
**Pre- requisites** : Aux Mach 1, Marlaw, MarEnv, PPD, PPS, PASGT, MGMT  
**Co-requisites** : None

**Course Description:**

The course deals with situational awareness, stress and fatigue management, leadership and group decision making, multi-cultural diversity, teambuilding development including safe and efficient engine room watch keeping.

**Course Description of Professional Subjects  
Bachelor of Science in Marine Transportation (3-1)  
Academic Year 2023-2024**

**First Year  
First Semester**

**Course Code** : **NAV 1**  
**Course Title** : Navigational Instruments with Compasses  
**Credit** : 4 units  
**Pre-Requisite** : None

**Course Description:**

The course includes topics on Navigational Instruments such as compasses particularly the gyro and magnetic compasses its principles and corrections to compass course and bearings and basic operation of electronic navigational equipment such as GPS, AIS, echo sounder, gyro and magnetic compass.

**Course Code** : **SEAM 1**  
**Course Title** : Ships, Ship Routines and Ship Construction  
**Credit** : 4 units  
**Pre-Requisite** : None

**Course Description:**

The course includes topics such functions of the members of the ships' organization, types of each ships and its parts, the working knowledge of the mooring system and related procedures, performance of the marlinespike seamanship skills and riggings in accordance with shipboard instructions and safety standards, performance of deck maintenance work in accordance with shipboard instructions and safety standards.

**Course Code** : **ICT**  
**Course Title** : Software Applications and Network Systems used in Seagoing Ships  
**Credit** : 2 units  
**Pre-Requisite** : None  
**Course Description** :

The course deals with the effective use of computer application for shipboard documents, evaluation of shipboard computer network in terms of modularity and expandability. It also deals with computer trouble shooting as per manufacturer's instructions. It also involves the use of specific onboard software for Planned Maintenance System, Spare-parts Control System, Bunkering Software, Fuel Consumption and Monitoring Software, and other deck related software.



First Year  
**Second Semester**

**Course Code** : **MET-O**  
**Course Title** : Meteorology and Oceanography  
**Credit** : 5 units  
**Pre-Requisite** : None

**Course Description:**

The course includes Ship borne meteorological instruments, the atmosphere, its composition and Physical properties, Atmospheric pressure, wind, cloud and precipitation, visibility. The wind and pressure systems over the ocean, Structure of depressions, Anticyclones and other pressure systems, weather services for shipping, Recording and reporting weather observations, and weather forecasting.

**Course Code** : **NAV 2**  
**Course Title** : Terrestrial and Coastal Navigation 1  
**Credit** : 4 units  
**Pre-Requisite** : NAV 1

**Course Description:**

The course includes topics such as the coordinate system of the earth, charts, datums, distance, and information from Charts, Lists of Lights, other Publications and the Bridge Logbook.

**Course Code** : **SEAM 2**  
**Course Title** : Trim, Stability and Stress  
**Credit** : 3 units  
**Pre-Requisite** : SEAM 1

**Course Description:**

This course covers the proper application of draught, trim and stability, cargo calculations and cargo plans. It enables the students to determine the effect on trim and stability from loading and unloading of cargoes and cargo operations.

**Course Code** : **COLREGS**  
**Course Title** : Collision Regulations  
**Credit** : 3 units  
**Pre-Requisite** : SEAM 1

**Course Description:**

This course covers the discussion and explanation of the proper application of international Regulation for Preventing Collision at Sea, 1972, as amended when I charge of navigational watch.

Second Year  
**First Semester**

**Course Code** : **NAV 3**  
**Course Title** : Terrestrial and Coastal Navigation 2  
**Credit** : 5 units  
**Pre-Requisite** : NAV 2

**Course Description:**

The course covers topics such as nautical charts and publications, sailings and directions, tide tables, notices to mariners, radio navigational warnings and ship's routing information. It also includes the sailings, planning and conducting a safe passage.

**Course Code** : **NAV 5**  
**Course Title** : Operational Use of RADAR and ARPA  
**Credit** : 3 units  
**Pre-Requisite** : COLREGS

**Course Description:**

This course covers the discussion and explanation of the operation of Radar and Arpa including all features in giving advance information to avoid collision in different situation from fundamental plotting to automatic acquisition applying the International Regulation for Preventing Collision at Sea.

**Course Code** : **SEAM 3**  
**Course Title** : Cargo Handling and Stowage (NDG)  
**Credit** : 3 units  
**Pre-Requisite** : SEAM 2

**Course Description:**

This course includes the different dry cargo. Reasons for general inspections of holds, cargo protection, ventilation and control of sweat, deck cargo, refrigerated cargo, cargo handling safety, care of cargo during the voyage, inspection and report defects and report damage to cargo spaces, hatch covers and ballast tanks in compliance with the requirements of STCW '95 Chapter 2 Section A-11/1 (Mandatory minimum requirements for certification of offices in charge of navigational watch on ship 500 Gross tonnage or more).

**Course Code** : **SEAM 4**  
**Course Title** : CHS: Dangerous Goods and Inspection  
**Credit** : 3 units  
**Pre-Requisite** : SEAM 2

**Course Description** :

The course includes cargo protection, container cargo, deep tank cargo, dangerous, hazardous and harmful cargoes, bulk cargo handling safety and care of cargo during the voyage.

**Course Code** : **MGMT**  
**Course Title** : Leadership and Teamwork  
**Credit** : 3 units  
**Pre-Requisite** : None  
**Course Description** :

Be capable of organizing and managing the crew for safe and efficient operation of the ship. Be capable to chair meetings on board and implement shipboard training programs as required by international community (including Model Course 1.39)

**Course Code** : **MAR ENV**  
**Course Title** : Protection of Marine Environment  
**Credit** : 3 units  
**Pre-Requisite** : None

**Course Description:**

The course includes topics such as Marine environment protection and prevention, International Convention for the prevention of Pollution from ships and the regulation which helps prevent marine pollution as per MARPOL 73/78. Regulations which involves ship construction and equipment requirements of the ships to attain the safest movement and handling of cargo such as oil, noxious liquid substances, and harmful substances in package form. It also tackle proper disposal of operational and domestic waste like oil, sewage and garbage, Emergency response of ships during oil spill.

**Second Semester**

**Course Code** : **MARPOWER**  
**Course Title** : Basic Marine Engineering  
**Credit** : 3 units  
**Pre-Requisite** : None

**Course Description:**

The course covers the study of the processes and the function of the different system of the engine and equipment needed for efficient operation, monitoring, watch-keeping and maintenance including the different auxiliary machineries needed for engine operations.

**Course Code** : **NAV 4**  
**Course Title** : Celestial Navigation  
**Credit** : 3 units  
**Pre-Requisite** : NAV 3

**Course Description:**

This course focuses on the basic concepts of celestial navigation. This also covers the basic of astronomy ant its usefulness to navigation in compliance with the requirements of STCW '78 as amended under Chapter 2 Section AII/I (Mandatory minimum requirements for certification of Officers in Charge of Navigational Watch on ships 500 gross tonnage or more.)

**Course Code** : **NAV 6**  
**Course Title** : Operational Use of ECDIS  
**Credit** : 3 units  
**Pre-Requisite** : NAV 5

**Course Description:**

This course covers the discussion and explanation of the proper operational use of Electronic Chart Display Information System of STCW 1972, as amended when in charge of navigational watch.

**Course Code** : **SEAM 6**  
**Course Title** : Advance, Trim, Stability, and Stress  
**Credit** : 3 units  
**Pre-Requisite** : SEAM 2

**Course Description:**

This course covers the discussion and explanation to determine whether stresses on the ship are within permitted limits by the use of stress data or calculation equipment, or to make the necessary calculations to ensure adequate stability and to check that shear forces and bending moments are within permitted limits.

**Third Year**  
**First Semester**

**Course Code** : **MARCOM**  
**Course Title** : Maritime Communications  
**Credit** : 4 units  
**Pre-Requisite** : None

**Course Description:**

The course includes transmit information by visual and receive information by Morse light and use of International Code of Signal and General Operators Certificate for the GMDSS IMO Model Course (1.25).

**Course Code** : **SEAM 5**  
**Course Title** : Ship Handling and Maneuvering  
**Course Credit** : 3 units  
**Pre- requisites** : COLREGS

**Course Description:**

The course includes the development of students' knowledge in ship handling and maneuvering. This also helps the students understand variable and proven methods and discuss scientific and natural laws involved in the movements of the ship.

**Course Code** : **MARLAW**  
**Course Title** : Maritime Law  
**Credit** : 4 units  
**Pre-Requisite** : None

**Course Description:**

This course is designed to develop basic understanding of students to the law of the sea that provides for the regulation, management and governance of ocean spaces. It introduces the study of the foundational principles of the law of the sea; critical overview of the 1982 United Nations Convention of the Law of the Sea; IMO conventions concerning safety of life at SEA, security and protection of the Marine Environment; International Maritime Law Embodied in International Agreements and Conventions and an analysis of subsequent developments, including bilateral, regional and global agreements that supplement the Convention.

## Second Semester

**Course Code** : **DECK WATCH**  
**Course Title** : Deck Watchkeeping with Bridge Resource Management  
**Credit** : 4 units  
**Pre-Requisite** : COLREGS, MGMT

### Course Description:

This course covers the discussion on maintaining safe navigational watch as stated in STCW as amended in 2010. It includes topics on steering control systems, principles in keeping a navigational watch, the use of routing, the use of information from navigational equipment for maintaining a safe navigational watch (Including IMO MC 1.34), knowledge of blind pilotage techniques, and the use of reporting in accordance with the general principles for a ship reporting system and with Vessel Traffic System (VTS) procedures.

**Course Code** : **NAV 7**  
**Course Title** : Voyage Planning  
**Credit** : 3 units  
**Pre-Requisite** : NAV 6

### Course Description:

The course includes the topic such as voyage planning and navigation for all conditions, routing in accordance with the general provisions on ships' routing in accordance with the general principles for ship reporting and bridge resource management.