

# MAINE MARITIME ACADEMY

A College of Engineering, Management, Science, and Transportation

## Adjunct Engineering Instructors and Lab Engineering Instructors – Fall 2024 semester

### POSITION OVERVIEW

This document describes duties that the Academy expects of adjunct and other temporary faculty members. Adjunct faculty are non-permanent, temporary faculty who are hired on a semester by semester basis.

### TEACHING

Teaching responsibilities include time spent in the classroom, laboratory, or training ship(s) and in immediate preparation for these; maintaining and improving competence in subjects being taught; preparing contemporary teaching materials; conferring with students on course materials; directing individual and group studies and practica; reviewing written examinations and papers; evaluating presentations; supervising independent study projects, supervising or teaching clinical cooperatives or industry programs, and assigning grades according to existing Academy policy.

### OTHER ASPECTS OF FACULTY PERFORMANCE

Collegiality, as well as professional and ethical conduct, enhances teaching, learning and the general reputation of all persons in the academy. Therefore, all faculty members are expected to serve in a collegial fashion and in accordance with professional and ethical principles when dealing with other faculty members, students, administrators, and members of the public.

### DUTIES

- Teach at undergraduate and graduate level in areas allocated by the Department Head and reviewed from time to time by the Department Head.
- Contribute to the development, planning and implementation of a high quality curriculum.
- Assist in the development of learning materials, by preparing syllabus and lesson plans and maintaining records to monitor student progress, achievement and attendance.
- Participate in the development, administration and marking of exams and other assessments.
- Provide advice and support to students.
- Inform students of their progress by promptly returning assignments, quizzes, papers and exams
- Office Hours required per week: Varies by assignment, typically 2-3 for an adjunct teaching 12 credits or more.
- Maintain an awareness and enforce fire and health and safety regulations applicable to the teaching location.

### ESSENTIAL SKILLS

- Teaching and other forms of public presentation.
- Proven record of ability to supervise academic work by undergraduates or masters students.
- Proven record of ability to manage time and work to strict deadlines.
- Ability to write clearly and tailor communication style to meet the needs of the recipient.
- Ability to work collaboratively.
- Commitment to high quality teaching and fostering a positive learning environment for students
- Commitment to MMA's policy of equal opportunity and the ability to work harmoniously with colleagues and students of all genders, cultures and backgrounds
- Excellent interpersonal, organizational and communication skills are essential
- Ability to maintain composure in stressful situations
- High degree of professionalism
- Demonstrated integrity and ability to maintain confidentiality

## MINIMUM QUALIFICATIONS

- Bachelor's degree or higher from an accredited institution or the highest degree appropriate in a relevant field of specialization.\*
- Candidates must have a 3 years minimum industrial experience in their appropriate industry.
- Prior successful teaching/training experience desired.
- Membership in relevant professional organization(s).
- Applicable professional license(s).
- Normally will have produced creative work, professional writing or research in refereed and other professional journals, and be a recognized authority in the field of specialization. Must meet Academy criteria for appointment to the rank of Assistant/Associate/Full Professor.
- \* Preferred but not required for: Lab Instructor, ET101, and ET399 positions.

## SPECIAL CONDITIONS

- Background check is required
- Tobacco-free campus.
- Must present original copies of transcripts

## COURSES/POSITIONS AVAILABLE

### **Lab Instructor - WELDING I & II – This course is part of the PNSY Workforce Development Program.**

Assist in the development and teaching of a 6-week introductory-level course in welding. The training course will be held July 8, 2024, through August 16, 2024. The course will be delivered Monday through Friday over an 8 to 9 hour period.

In addition, assist in the teaching of up to 4 sections EG243 (Welding ) during both the Fall 2024 and Fall 2025 academic semesters. EG243 course is an introduction to and practice in the principles, safety aspects, and correct operations of arc welding and oxyacetylene cutting. Emphasis is on all-position shielded metal arc welding. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Each section of the course is scheduled for a 3-hour period and is typically offered on Tuesdays and Thursdays.

This is a one-year, full-time, health care benefit-eligible temporary position. The compensation is \$60,000.

### **Lab Instructor - MACHINE SHOP I & II – This course is part of the PNSY Workforce Development Program.**

Assist in the development and teaching of a 6-week introductory level course in machining. The training course will be held July 8, 2024, through August 16, 2024. The course will be delivered Monday through Friday over an 8 to 9 hour period.

In addition, assist in the teaching of up to 8 total sections of either EG351 (Machine Tool Operation II) or EG252 (Machine Tool Operations I) during the Fall 2024 and Fall 2025 academic semesters. EG252 is an introductory course in machine tool practices. This course is designed to give students the basic theory and practical application necessary to operate machine tools and associated equipment such as engine lathe, milling machine, drill press, precision measuring and layout tools. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. EG252 is typically offered on Tuesdays and Thursdays during the Spring semester. EG351 provides a continuing

opportunity to receive actual practice in threading and milling projects, and presents a practical study of the operation and utilization of lathes and milling machines. EG351 is typically offered on Tuesdays and Thursdays during the Fall semester. Each section of both courses is scheduled for a 3.5 hour period. Performance of maintenance and repairs on machine shop equipment during this one-year appointment, may be “substituted” for up to 2 sections of a course each semester at the discretion of the Department Chair.

This is a one-year, full-time, health care benefit-eligible **temporary** position. The compensation is \$60,000.

**Lab Instructor - MARINE MECHANIC I & II – This course is part of the PNSY Workforce Development Program.**

Assist in the development and teaching of approximately 3 weeks of a 6-week introductory level course in marine mechanics. The training course will be held July 8, 2024, through August 16, 2024, and this position will likely teach one-half of each day for 3-weeks.

In addition, teach or assist in the teaching of up to 12 units of coursework during both the Fall 2024 and Spring 2025 academic semesters. Coursework will likely include ET101 “Graphics” which is a study and practice in lettering, use of tools, methods of geometric construction, multi-view projection, orthographic representation, and delineation applied to marine technology and engineering. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Each 3-unit section of ET101 meets twice a week for 2-hours each.

This is a one-year, full-time, health care benefit-eligible **temporary** position. The compensation is \$60,000.

**BIW ET306 (Mechanics II) - This course is part of the BIW Apprenticeship Program.**

The study of forces applied to structures. Introduces vector mechanics, static equilibrium, two and three dimensional force systems, distributed forces and friction, linear and angular kinematics, linear and angular kinetics, energy methods, impulse, momentum, kinetics of three-dimensional motions, and vibrations. Structures studied include plane and three-dimensional trusses, frames, beams, and cables. Student Prerequisite: BIW ET206. Rec. 3, Cr. 2.

One three-hour lecture/recitation period per week – One instructor - Typical Class Size 12-16  
Lecturer needed for one section - Compensation starts at \$3,000/section (3 units per section)

**EG234 : Power Equipment Lab** — An introduction to marine and stationary power plant systems and equipment through study, inspection, and maintenance applications. Topics include lubrication and lube oil purification systems; pumps; air removal equipment; and heat exchangers; piping systems and valves; control systems for temperature, pressure, and flow; compressed air systems; distilling plants; and auxiliary steam turbines. In addition, basic equipment techniques and tag-out safety procedures are introduced. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: EG101. Rec. 1, Lab 2, Cr. 2.

One three-hour lab per week - Two instructors (lead, assistant) per lab - Typical Class Size 16  
Lab Instructors for up to two sections - Compensation starts at \$2,000/section (2 units)

**EG243 : Welding** — An introduction to and practice in the principles, safety aspects, and correct operations of arc welding and oxyacetylene cutting. Emphasis is on all-position shielded metal arc welding. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 1, Lab 2, Cr. 2.

One three-hour lab per week - Two instructors (lead, assistant) per lab - Typical Class Size 16  
Lab Instructors for up to five sections - Compensation starts at \$2,000/section (2 units)

**EG351 : Machine Tool Operations II** — Practical study of the operation and utilization of lathes and milling machines. Provides a continuing opportunity to receive actual practice in threading and milling projects. Prerequisite: EG252. Rec. 1, Lab 3, Cr. 2.5.

One four-hour lab per week - Two instructors (lead, assistant) per lab - Typical Class Size 24  
Lab Assistant Instructor for up to four sections - Compensation starts at \$2,500/section (2.5 unit)

**EG372L : Electrical Power II Lab**— Builds on ET/ES371 to develop an understanding of design, construction, operational characteristics, efficiency and maintenance of DC and single- and 3-phase AC machinery, and pulse-width modulation (PWM) and its applications to propulsion and industrial drives. Lab work will emphasize principles of safe and efficient operation, troubleshooting, and installation of electrical machinery and systematic use of measuring equipment. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: MS110 or MS150, ET371 or ES371, PS102 or PS162, CE203 or CO200 or CO201 or CO203. Rec. .5, Lab. 1.5

One two-hour lab per week - Two instructors (lead, assistant) per lab - Typical Class Size 16  
Lab Assistant Instructor for up to four labs - Compensation starts at \$1,250/section (1.25 unit)

**EG481L : Marine Refrigeration & Air Conditioning Lab**— Refrigeration processes encountered in the marine field and industry. Includes the design, operation, and maintenance of the principal refrigeration cycle components, reciprocating and rotary centrifugal compressors, and the refrigerants used. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisite: ET211 or ES201 Rec. .2, Lab. .8

One one-hour lab per week - Two instructors (lead, assistant) per lab - Typical Class Size 12  
Lab Assist Instructor needed for up to four labs - Compensation starts at \$750/section (0.75 units)

**ES205 : Engineering Statics** — The study of forces applied to structures. Includes an introduction to vector mechanics, static equilibrium, two and three-dimensional force systems, distributed forces, and friction. Structures studied include trusses, frames, and beams. Prerequisites: MS110 or MS150 and PS102 or PS162. Rec. 3, Cr. 3.

Three one-hour lectures per week - One instructor per section - Typical Class Size 24  
Lead Instructor needed for one section - Compensation starts at \$3,000/section (3 units)

**ET101 : Graphics** — Study and practice in lettering, use of tools, methods of geometric construction, multiview projection, orthographic representation, and delineation applied to marine technology and engineering. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 2, Lab 2, Cr. 3.

Two two-hour lecture/lab per week - One lecturer per lab - Typical Class Size 20  
Lecturer needed for up to four sections - Compensation starts at \$3,000/section (3 units)

**ET201L : Fluid Power Lecture**— An introduction to applied fluid mechanics, including properties, hydrostatic pressure, flow and pressure, flow and pressure measurements, forces on areas, continuity equation, Bernoulli and general energy equations, analysis of piping systems for losses, and pump selection. These principles are applied to a variety of typical engineering problems in fluid systems. This course is designed to develop each student's ability to analyze engineering problems. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: MS101 and CS150 (or equivalent). Rec .5, Lab 1.5

Three one-hour lectures per week – One lecturer per section - Typical Class Size 24  
Lecturer needed for up to two sections - Compensation starts at \$3,000/section (3.0 units)

**ET201L : Fluid Power Lab**— An introduction to applied fluid mechanics, including properties, hydrostatic pressure, flow and pressure, flow and pressure measurements, forces on areas, continuity equation, Bernoulli and general energy equations, analysis of piping systems for losses, and pump selection. These principles are applied to a variety of typical engineering problems in fluid systems. This course is designed to develop each student's ability to analyze engineering problems. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: MS101 and CS150 (or equivalent). Rec .5, Lab 1.5

One two-hour lab per week - Two instructors (lead, assistant) per lab - Typical Class Size 16  
Lab Assist Instructor needed for up to four labs - Compensation starts at \$1,250/section (1.25 unit)

**ET399: Intermediate CADD** - This class will build upon the Solidworks foundation laid in ET101. Students will control drawings with relations in addition to using dimensions. Using Solidworks, students will build advanced parts, assemblies & drawings that include material & cut lists, and the use of 3D printers. To build prototypes of parts and complete assemblies. The final project will be building a single cylinder steam engine that will run on air. Prerequisites: ET101 or instructor permission. Rec 1.5 Lab 2.5, Cr 2.

Two two-hour lab per week - One instructor per section - Typical Class Size 16  
Instructor needed for up to one section - Compensation starts at \$2,500/section (2.50 unit)

**ET-401L: Automation & Control Lab** - A study of principles and hardware for control and automation systems as applied to processes in marine and shoreside power plants. Media studied include pneumatic, hydraulic, mechanical, and electrical/electronic. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Prerequisites: EG372, CE203 or CO200 or CO201 or CO203. Co-requisite: ET432. Rec. 2, Lab. 2, Cr. 3.

One two-hour lab per week - Two instructors (lead, assistant) per lab - Typical Class Size 16  
Lab Assist Instructor needed for up to one lab - Compensation starts at \$1,250/section (1.25 units)

**ET452 : Technical Communications** — Extension of the theory and practice of communications tasks of a working engineer or technologist, including engineering proposals and reports; mechanism and process description; instructions, accident or casualty reports; technical specifications; and progress reports. Application of effective visual aids to both oral and written communications will be emphasized. This course supports the marine license program requirements to meet the Standards for Training, Certification and Watchkeeping (STCW). The course may have embedded assessment requirements that must be completed in addition to the class requirements. Rec. 3, Cr. 3.

Three one-hour lectures per week - One instructor per section - Typical Class Size 14  
Lead Instructor needed for up to two sections - Compensation starts at \$4,000/section (4 units)

**NE202: Nuclear Materials and Their Applications:** An extension of nuclear engineering operations, this course delves into the industrial uses of nuclear materials including power generation, biological and chemical testing, calibration of instruments, as well as monitoring and optimizing manufacturing processes. The course supports the MMA nuclear engineering minor. Prerequisites: Ne-201. Rec. 3, Cr. 3.

Two 75-minute lecture/lab sessions per week - One lecturer per section - Typical Class Size 16  
Lecturer needed for one section - Compensation starts at \$3,000/section (3 units)

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