



CARIBBEAN MARITIME INSTITUTE

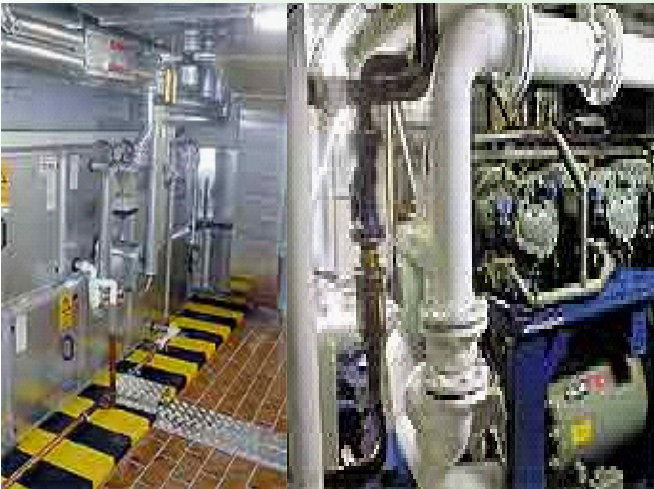


ENGINEERING PROGRAMMES

Redefining Maritime Excellence Through Innovation

Bachelors of Engineering (B.Eng.) Degree in Industrial Systems

This degree is designed to produce a well-rounded graduate with the engineering knowledge and skills combined with management education that will adequately prepare him/her for contributing towards the process of technical implementation and innovation within the manufacturing industry.



Course Philosophy and Rationale

This course is designed to take advantage of computer-aided engineering tools and management systems available to educate a multi-disciplinary engineer. Such a person will have knowledge of industrial systems operations and maintenance, together with other traditional fields of engineering that are associated with manufacturing, but will have an investigative approach to problem solving.

Target Group

This degree programme is designed to produce graduates with effective engineering skills of a broad nature. It will meet the training needs of personnel from the following industries both nationally and regionally:

Public Utilities: Power generation, Water distribution and Hospitals

Manufacturing: Clothing, Fabrication and Light industry

Process: Bauxite, Cement, Sugar and Petro-chemicals

Ancillary: Transport and Shipping, Agricultural and Refrigeration

Commercial: Property Management, Tourism and Printing

Course Structure

This course is structured using a modular format allowing attendance on a full-time or part-time basis. The course is two years full-time or three years part-time for applicants with the prerequisite Associate of Applied Science Degree in Industrial Systems Operation and Maintenance (AAScISOM). For students with other qualifications, the duration will vary depending on the point of entry and the mode of attendance.

It is envisaged that a credit accumulation version will be offered in the near future enabling the programme to be totally industrially friendly. The major project has major significance in ensuring both application of analytical techniques and the development of problem solving, reporting and presentation skills.

Entry Requirements

The normal entry requirement is the Associate of Applied Science Degree in Industrial Systems Operation and Maintenance or any qualification deemed to be equivalent to the Associate of Applied Science Degree.

Course Content

Science

- Engineering Mathematics I, II and III
- Probability and Statistics
- Research Methods
- Occupational Health and Safety

Core Engineering

- Control Engineering and Instrumentation
- Industrial Electronics
- Computer Architecture

- Designs, Materials and Processes
- Energy and Fluid Flow
- Computer Programming
- Energy Conversion Systems
- Renewable Energy
- Computer Aided Design and Manufacturing
- Manufacturing Processes I and II
- Strength of Materials and Structures
- Industrial Systems and Material Handling
- Dynamics, Noise and Vibration
- Microcontroller Applications

Core Management

- Management for Engineers
- Labour and Employment Law
- Operations Management

To achieve the Bachelors of Engineering in Industrial Systems, candidates must successfully complete all core courses and a ten (10) credit dissertation.

Dissertation

The dissertation will offer the opportunity:

- For independent learning to either broaden or deepen understanding of a subject area related to the subject matter of the award.
- To develop the ability to apply technical knowledge in the solution of an extended problem, constrained by realistic contextual factors.
- To undertake an extended piece of work developing the use of research skills and of personal, project and time management.

Duration

Full Time: Two years (4 semesters)

Part Time: Two years (4 semesters and 2 Summers)

Associate of Applied Science Degree in Industrial Systems, Operations and Maintenance (AASc. ISOM)

The Industrial Systems Operation and Maintenance programme is designed to equip participants with the requisite skills and knowledge for the safe and economical operation of most of the machinery and equipment used in industrial plants and facilities requiring heating air-conditioning and electrical power generation.

Graduates of this programme will be at an engineer technician level with sound theoretical background to understand and identify equipment faults and minimizing down time. They will also be able to supervise personnel in the operation and maintenance of industrial equipment.

Objectives

To equip candidates with the skills of maintenance and operation of machinery and equipment in industry with the requisite skills of planning and implementing systems control.

Programme Delivery Mode

Part Time Day Release: One full day and one evening over six (6) semesters at 15 weeks per semester and three summers.

Full-time: Five (5) days per week for four (4) semesters at 15 weeks per semester and two summers. The final summer will be spent on work experience.

Entry Requirements

At least five (5) GCE O' Level or CXC subjects (Mathematics, English and three other subjects, preferably including two science subjects)

OR

At least four years related industrial experience with at least GCE or CXC passes in Mathematics, English and Physics/Mechanical Engineering Science. In the

event the prospective candidate does not have English, he/she will be required to sit and pass an English entrance test set by the Institute.

OR

Course exemption from other marine officer's programme and other Institutions to be assessed and awarded.

OR

Preliminary Course of Study with a GPA of 2.4 and candidates must successfully complete this course.

Course Duration

Full Time: Two years (4 Semesters and 2 Summers

Part Time: Three years (8 Semesters and 3 Summers)

Course

Science

Mathematics I

Mathematics II

Mathematics III

Ind'l Engineering Chemistry A

Ind'l Engineering Chemistry B

Mechanical Engineering Science

Engineering

Electrical Engineering Science

Engineering Drawing and Designs I

Engineering Drawing and Designs II

Workshop Processes and Practice

Workshop Technology

Electrical Machines I

Electrical Machines II

Welding

Materials Technology

Electronics Principles

Fuel Technology

Fluid Mechanics

Mobilization of Fluids

Diesel Plant Principles

Diesel Plant Operations

Principles of A/C and Refrigeration

Industrial Boiler Operations
Instrumentation and Controls I
Production Systems
Principles of Thermodynamics

Managment

Communication Skills I
Communication Skills II
Engineering Ethics
Introduction to Management

Industry Awareness

This will be undertaken during an 8-week period during the final summer for which a project will have to be written by each student.

Award

On successful completion of this programme, candidates will be awarded an Associate of Applied Science Degree.

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