DEGREE	**MSc. Hyperbaric Medicine**
INTRODUCTION	Training in hyperbaric oxygen therapeutics confers important academic and professional advantages to future physicians, broadening and deepening their basic scientific foundations. Students enrolled in the Programs of Hyperbaric Medicine will experience the additional benefits of hands-on exposure to patients as early as the first semester of medical training and hence are greatly clinically advantaged as compared to most of their US-trained counterparts.
PROGRAM NAME	Masters in Hyperbaric Medicine or Diploma in Hyperbaric Medicine (*)
DESCRIPTION	This program can be completed by MD candidates that seek to have an in depth knowledge of hyperbaric medicine.
LOCATION	**Curacao Campus**
PREREQUISITE	**BSc. In sciences**
DURATION	**2 years (**)**
CURRICULUM	**see below**
TUITION AND FEES	**$8,500 (Masters) and $7,000 (Diploma)**
OTHER	**(*) Diploma course completes the same program as MSc., except that the requirement for thesis is omitted.** (**) Transfer credit may be given to students who have already completed certain courses as part of the SAICHS Pre-Med program or SAISOM MD program.

CURRICULUM DETAILS

Required Courses	**Hours**
Oxygen Therapeutics	88
Seminar in Hyperbaric Medicine	25
Hyperbaric Tender Training	8
Hyperbaric Driver Training	12
Anatomy**	256
Physiology**	160
Neuroscience**	160
Biochemistry **	160

(*) Transfer credit may be given to students who have already completed indicated courses at another university, college, or medical school. Students enrolled in the program of Basic Sciences or Accelerated Pre-Med program at SAICHS fulfill the indicated requirements as part of their training in the Basic Sciences.

1. History of pressure therapy in medicine

2. Physiologic effect of pressure and immersion
    a. Physics of diving

3. Mechanical effects of pressure
    a. Reduce bubble volume
    b. Inert gases, supersaturation, re-dissolving nitrogen bubbles

4. Physiologic effects of hyperbaric oxygen
    a. Increase in healing of hypoxic wounds
    b. Inhibition of Clostridial alpha toxin
    c. Lessening carbon monoxide toxicity
    d. Influence on various blood cells
    e. Vasoconstriction
    f. Decrease in edema in burns and post-ischemic tissue
    g. Preservation of tissue flaps
    h. Decrease in lipid peroxidation
    i. Inhibit PMN adherence/role of HBO2 in ischemia reperfusion injuries

5. Approved indications for hyperbaric oxygen therapy
    a. Air or gas embolism
    b. Carbon monoxide poisoning
    c. Carbon monoxide poisoning complicated by cyanide poisoning
    d. Clostridial myonecrosis
    e. Acute traumatic ischemias
    f. Decompression sickness
    g. Enhancement of healing in selected problem wounds
    h. Exceptional blood loss
    i. Necrotizing soft tissue infections
    j. Refractory osteomyelitis
    k. Radiation tissue damage
    l. Compromised skin grafts and flaps
    m. Thermal burns

6. Contraindications and side effects of HBO
    a. Absolute
    1. Untreated pneumothorax
    2. Selected medications (e.g. bleomycin)
    b. Relative
    1. COPD with CO_2 retention, bullous disease
    2. High fever
    3. Seizure disorder
    4. Recent thoracic surgery
    5. Ear or sinus surgery
    6. Congenital spherocytosis
    7. Optic neuritis
    8. Claustrophobia
    a. Side effects
    1. Barotrauma (otic, sinus, pulmonary)
    2. Visual refractive changes
    3. Oxygen induced seizures and other CNS effects
    4. Claustrophobia
    5. Pulmonary oxygen toxicity

7. Decompression Theory
    a. Inert gas exchange
    b. Mechanisms of bubble formation
    c. Saturation decompression theory
    d. Repetitive diving
    e. Surface decompression
    f. Bubble detection
    g. Mixed gas diving
    h. Flying after diving

8. Pathophysiology and treatment of decompression illnesses
    a. Signs and symptoms of decompression sickness and AGE
    b. Mechanisms of gas entry and distribution
    c. Effects of bubbles
    d. Dysbaricosteoncrosis
    e. Barotrauma
    f. Treatment of decompression illnesses

9. Tissue oxygen measurements
    a. Ankle brachial index
    b. Transcutaneous oximetry

10. Multiplace chamber operation
    a. Equipment considerations
    b. Patient considerations
    c. Emergency procedures

11. Monoplace chamber operation
    a. Equipment considerations
    b. Patient considerations
    c. Emergency procedures

12. Investigational areas (examples)
    a. Ischemia reperfusion injury
    b. Myocardial infarction
    c. Cerebro-vascular accident

13. Health hazards in divers
    a. Recognition and treatment of hazardous marine life injuries

Oxygen Therapeutics (88 hours – Masters & Diploma)
The course will encapsulate physiological and clinical aspects of hyperbaric gases in human subjects and patients, taking into account current literature concerning novel applications. Lecture/seminars and independent study will focus on indications for the use of pressurized gases in cases of gas embolism, carbon monoxide and cyanide poisoning, clostridial myonecrosis, traumatic ischemia, decompression sickness, wound healing, exceptional blood loss, necrotizing infections of soft tissue, osteomyelitis, radiation-induced damage to tissue, skin grafts and flaps, and burns. Applications of transcutaneous oximetry in the context of hyperbaric medicine will be stressed. Students are expected to conduct considerable independent study related to the course.

Seminar in Hyperbaric Medicine (25 hours)

The course comprises interactive sessions a covering the history of undersea and hyperbaric medicine, high- and low-pressure physics, diving physiology, decompression Illness, clinical examination; approved therapeutic uses of hyperbaric oxygen, experimental uses of hyperbaric oxygen, transcutaneous oximetry, and hyperbaric chamber safety.

Additional Programs

Hyperbaric Tender Training (8 hours)

Hyperbaric Driver Training (12 hours)