**Miami Beach Senior High School**

**Academy of Marine and Environmental Science**

What is AMES? The Academy of Marine and Environmental Science (AMES) is an outstanding new program for Miami Beach High School students in grades 10-12 who want to enhance their high school career with a challenging and meaningful “real world” experience. The Academy features a dynamic cluster of elective and core academic courses that focus on one of today’s most important fields of inquiry, research, and application.

The academy works with local businesses to provide student internships, job shadowing opportunities, field trips, research experiences, and a number of other supports to the program. Some of our current support groups include the Environmental Coalition of Miami and the Beaches (ECOMB), Celebration of the Sea Foundation, Tarpoon Dive Center, The Big Blue and You Foundation, and the U.S. Coast Guard Auxiliary. All of our academy programs are generously supported by donations from the Shepard Broad Foundation.

Join AMES and you will have the opportunity to participate in unique experiences such as:

* Preparation for college and careers

* Interesting courses and teachers
* Hands-on projects that matter

* Field trips and outdoor experiences
* Research and data collection
* Public awareness campaigns and video production
* Big Blue and You “One Water” workshop
* Pollution monitoring and clean-up
* Work with threatened or endangered species
* Diving and boating safety instruction

* Guest speakers

* SCUBA club
* World Ocean Watch
* Sea Turtle Program
* Forest Watch Program
* Clean Beaches Campaign
* Reef Restoration
* WeatherBug Activities
* Beach High Environmental Center and greenhouse
* National Ocean Sciences Bowl (NOSB) Team Competition

 AMES students can also participate in internships with local businesses, government agencies, and other area educational or research institutes in the field of marine or environmental science. Many of these internships are paid positions, and in some cases. the jobs can continue through the school year on a part-time basis. In addition to gaining valuable real-world experience, internships can serve as a key element of a solid college application.

**Program of Study**

|  |  |  |  |
| --- | --- | --- | --- |
| **Grade** | **Required Courses** | **Student Projects** | **Certifications** |
| **9th** | *Ecology**(future offering)* | *Forest Watch Program**World Ocean Watch Program**Environmental History of South Florida**Greenhouse, Gardening, and Restoration Projects**NASA LandSat Imaging**SCUBA*  | *Open Water SCUBA Certification**(1 college credit)* |
| **10th** | *Marine Science I* | *Miami Beach Turtle Tracking* *Summer/Fall**WeatherBug Projects**Seagrass Project* | *Advanced Diver Certification**(1 college credit)* |
| **11th** | *Marine Science II* | *One Water Workshop* | *Rescue Diver**Boaters Safety Course USCG* |
| **12th** | *Advanced Placement**Environmental Science or Environmental Science* | *Career Internships**Internal/External* | *Dive Master**(2 College Credits)* |

All AMES students will participate in required workshops, field trips, and instructional programs throughout the course of their high school career. SCUBA diving participation and certification is voluntary and based on available positions and eligibility requirements.

**Typical Student Schedule**

**Grade Regular Honors/ IB/ Scholars**

|  |  |  |
| --- | --- | --- |
| **9th** | *Ecology (AMES)**Earth Science* *Algebra 1 or Geometry**World History**English 1**Arts or Foreign Language Elective**Personal Fitness/Physical Education**Elective* | *Ecology (AMES)**Biology or Chemistry Honors**Geometry or Algebra 2 Honors**AP World History**English Honors**Foreign Language Honors**Personal Fitness/Physical Education**Arts or Elective* |
| **10th** |  *Marine Science 1 Honors (AMES)**Biology* *Geometry or Algebra 2**English 2**Arts or Foreign Language Elective**Electives* | *Marine Science 1 Honors (AMES)**Chemistry or Physics Honors**Algebra 2 or Pre-Calculus Honors**English 2 Honors**Arts or Foreign Language Elective**AP European History**AP Biology or Chemistry**Dual Enrollment Class or Electives* |
| **11th** | *Marine Science 2 Honors (AMES)**Chemistry or Physical Science**Algebra 2 or Integrated Math**English 3**American History**Art or Foreign Language Elective**Electives* | *Marine Science 2 Honors (AMES)**Physics Honors or AP/IB Science**Calculus or Statistics Honors or**AP/IB Math* *English 3 Honors**Anatomy and Physiology Honors**AP US History or IB History of the Americas**Dual Enrollment Class or Electives* |
| **12th** | *Environmental Science (AMES)* *Liberal Arts Math**English 4**Government and Economics**Internship (AMES)**Electives* | *AP Environmental Science (AMES)**English 4 Honors**AP Government and Economics or IB History of the Americas**AP/IB Science**AP/IB Math**Dual Enrollment or Electives* |

## AMES Advisory Board Members:

Dr. Rosann Sidener, Principal

Mr. David Guthrie, AMES Lead Teacher, Science Department Chair

Mr. Patxi Pastor, Celebration of the Sea Foundation

Mr. Jake Shekels, Tarpoon Lagoon, Master Diver/Instructor

Mr. Morris Broad, Shepard Broad Foundation, Beach High Alumnus

Dr. Jayne Greenberg, Director Physical Education, MDCPS

Mr. Luiz Rodrigues, ECOMB

Ms. Danielle Washington, The Big Blue and You Foundation

Mrs. Luisa Diaz, AMES Teacher

Mr. Paul Rehage, AMES Teacher, SCUBA Club Sponsor

Mr. Ron Hunter, Naval Science Teacher, JROTC

Mrs. Jodi Robins, AMES Assistant Principal

Mr. Miguel Flores, Assistant Principal

Mrs. Charmaine Williams, AMES Counselor

Parent Representatives \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**AMES Officers and Board:**

President \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vice-President, Activities \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vice-President, Advocacy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Secretary \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Business Manager \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Assistant Business Manager \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Historian \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Web Designer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Newsletter Journalist \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Application Form (please print) Return to Mr. Guthrie in Room 3753

Academy of Marine and Environmental Science

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ID #\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phone\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade\_\_\_\_\_\_ Current Science Class\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write a brief statement that summarizes your reasons for selecting AMES as the Academy you wish to enter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Check and describe any of the following experiences or activities you enjoy and have participated in:

* Hiking, camping, outdoor recreation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Swimming, snorkeling, diving\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Boating\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Environmental protection\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Fishing\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Vacation or visit to zoos or parks\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Work with animals or plants\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Check any of the following that apply:

* I am a certified diver Describe\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* I have my own diving equipment
* I am interested in receiving diving certification and would join SCUBA Club

Describe your interests in pursuing science in college or as a career\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

By signing below, you indicate that you are willing to take the required academy classes in the proper sequence and participate in academy programs where appropriate.

* Ecology (9th)
* Marine Science 1 (10th) Marine Science 2 (11th)
* Environmental Science or AP Environmental Science (11th or 12th)
* Internship (12th)

Student Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Parent/Guardian Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Science Teacher Recommendation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Academy Lead Teacher Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SCUBA Component**

Marine Scientists use SCUBA to explore the relatively shallow regions of the oceans. As students in the Academy of Marine and Environmental Sciences, you will have the opportunity to earn your SCUBA certification, college credit, and enrich your life through participation in recreational and scientific diving.

**How does it work?**

Our Academy has partnered with the owners and instructors of **Tarpoon Lagoon Dive Center**. The Dive Center’s instructors provide our students with thorough instruction, diving equipment, and coordinate all dives.

All students interested in diving or snorkeling fieldtrips must pass a swim test.

All certification classes are conducted by Tarpoon Lagoon’s Certified Dive Instructors at MBSH

Students complete 3-4 classroom sessions and must pass a test to demonstrate their understanding of dive theory.

All students must perform dive skills during pool sessions at Monty’s pool adjacent to the Dive Center.

All students must perform 4 open water dives (typically 2 shallow water dives in Key Largo and two deep water dives off of Miami Beach.

Small class size (max 10 students per class with one class each academic quarter).

**How are student selected?**

Students must be in the ***Academy of Marine and Environmental Sciences (AMES)***.

Each quarter a cohort of ten **AMES** students will be selected to participate in open water diving certification.

Students must complete an application and meet and accept specified conditions outlined on the SCUBA application.

Students must demonstrate excellent listening skills and potential as a contributing team member.

* Students’ academics and behavior in class will influence selection.

**What are the associated costs?**

* SCUBA certification is $290
* Subsidizing and scholarships are available (see application)

**SCUBA Application** (please print) Return to Mr. Rehage RM 376

**Academy of Marine and Environmental Science**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ID #\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Home Phone \_\_\_\_\_\_\_\_\_\_\_\_\_\_Grade\_\_\_\_ Current Science Class\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Your email address\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Your cell phone \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Why do you want to become a SCUBA diver? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe any of the following water related activities you enjoy and have participated in:

* Swimming, snorkeling, diving, surfing\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Boating\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Environmental protection\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Fishing\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe the type(s) of diving activities that interest you (recreational, reef restoration, reef/seagrass monitoring).

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_I can afford SCUBA certification on my own

\_\_\_I would need financial assistance to receive SCUBA certification

Student Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_ Parent/Guardian Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_

Science Teacher Recommendation\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SCUBA sponsor Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_