DUNBAR HIGH SCHOOL
An International Baccalaureate World Class S.T.E.M. School

CREATING AN EPICENTER OF EXCELLENCE

The Premier S.T.E.M. (Science Technology Engineering Math) International Baccalaureate School for the East and South Zone

Featuring Advanced Technology Certifications, and College Preparatory Biomedical and Engineering Programs
The International Baccalaureate Diploma Program is designed to meet the highest standard required of any high school student in the world. Successful completion of the Diploma Program earns the student a diploma recognized for university admission throughout the world and for course credit and academic placement in 1000 leading colleges and universities in the United States.

The IB Diploma program is a system of syllabi and examinations based on the idea that general education at the upper secondary level should encompass the development of all the main powers of the mind through which the student interprets, modifies, and enjoys his/her environment.

Embracing the last two years of secondary education, the curricula of the Diploma Program incorporates standards that assume a high level of achievement during the prior years. The subjects are outlined according to six areas:

- Language A (English)
- Language B (Foreign Language)
- Individuals and Societies (Social Studies)
- Experimental Sciences
- Mathematics
- Arts and Humanities

In addition to the above courses, the IB Diploma Candidate must also take a unique course called Theory of Knowledge, participate in an intensive community service project, and write an extended essay.

Theory of Knowledge (TOK) is an interdisciplinary requirement intended to stimulate critical reflection on knowledge and experience gained inside and outside of the classroom.

Community Action & Service (CAS) requires the student to demonstrate creativity, action and service in relationship to school and community.

Extended Essay (EE) is 4000 words on a subject of their choosing.

The International Baccalaureate Career-related Program framework allows students to specialize in, and focus on a career-related pathway (STEM). The program’s three-part framework comprises the study of at least two Diploma Program courses alongside career-related studies (STEM) and the distinctive IBCP core which is designed to create a bridge that connects each student’s chosen Diploma Program courses and career-related studies (STEM).

For IBCP students, Diploma Program courses provide the theoretical underpinning and academic rigor of the program; career-related studies further support the program’s academic strength and provide practical, real-world approaches to learning; and the IBCP core helps them to develop skills and competencies required for lifelong learning.

Diploma Program courses
IB World Schools select a number of IB Diploma Program courses as part of the IBCP framework. These courses can come from any of the subject groups in the IB Diploma Program and may be studied at standard or higher level. It is possible to study from two to four Diploma Program courses depending on the nature of the student’s career-related studies and timetable. The Diploma Program courses chosen should be relevant to the student’s career-related studies.

Career-related studies (STEM)
The career-related element of the program provides the opportunity for students to learn about theories and concepts through application and practice while developing broad-based skills in authentic and meaningful contexts. The career-related studies available at DHS are:

- PLTW: Biomedicine or Engineering
- Academy for Technology Excellence: Digital Design | TV Production | Game Simulations & Animation | Foundations of Web Design | Engineering by Design | Intro to Information Technology | Network Administrator

http://www.ibo.org
Advance Technology Certification Programs

Over $50,000 worth of Technical Training Leading to College & Career Readiness

INTERNSHIPS AND WORLDWIDE RECOGNITION OPPORTUNITIES

Academy for Technology Excellence

The Academy for Technology Excellence is dedicated to providing a rigorous and deliberate IT course track to drive competency for a Network System Administrator computer science career. This track is a complete immersion track of courses that allow students the potential to earn over 18 industry standard IT computer certifications, such as the Microsoft Office Specialist: Word, PowerPoint, Excel, Outlook, Access, Cisco Certified Network Associate and Entry Network Technician, CompTIA A+, Network+, Server+ and Security+, as well as the Microsoft Technology Associate: Server, Networking, Operating Systems, Security and the Microsoft Certified Solution Associate: Server, Windows Operating System certifications.  http://MicrosoftITAcademy.com

Academy for Digital Excellence

The Academy for Digital Excellence program offers Web Design, Digital Design & TV Production courses that engage students in the digital arts. Students will gain hands-on experiences that will lead to the 6 design industry standard IT certifications in Adobe Photoshop, Illustrator, InDesign, Dreamweaver, Flash, & Premiere Pro. Courses you can take include: Web Design, Digital Design, and TV Production. We have a state of the art TV production studio complete with sound booth, studio cameras, green screen, and production editing software – Adobe Premiere Pro and Adobe Sound Booth.

http://www.adobe.com/education/certification-programs.edu.html

Academy for Game Design & Programming Excellence

The Academy for Game Design and Programming Excellence offers students the ability to understand the fundamental principles of game and simulation concepts in a project based course environment. Students will learn game and animation design principles, coding languages, and more. Our instructors are dedicated in using industry standard software and tools to gain students these amazing key skills. Students enrolled in the game design program will gain the skills necessary to receive Autodesk 3D Studio Max certification, as well as, Adobe Flash, Illustrator, and Photoshop credentials. Game Design and programming uses a variety of hardware and software tools in order for students to find a medium that best suits their need to create 2-D to 3-D games.  http://www.certiport.com
The Engineering College Preparatory Program

Project Lead the Way (PLTW)

IMAGINE IT, DESIGN IT, FUND IT, BUILD IT

The Engineering curriculum is designed to encourage students to pursue engineering and related disciplines in college. PLTW has relationships with more than 100 colleges and universities. Of these, 36 offer credit for completion of select PLTW courses.

Introduction to Engineering Design
Students learn to see the world as an interconnected web of codependent systems. They are introduced to the process of designing, documenting, and applying basic engineering principles to the construction of simple examples like cell phone protective cases, 2 and 3d interlocking puzzles, and scale models. They learn how to use 3d printers, welders, forges, CNC plasma cutters, mills and lathes. As preparation for more extensive projects students are introduced to grant writing and invited to participate on regional, state, and national competition teams.

Principles of Engineering
Through problems that engage and challenge, students explore a broad range of engineering topics, including machines and mechanical advantage, the strength of structures and materials and how they fail, and automation using programmable microcontrollers. Students will work in teams to collaborate on solutions and then present them.

Biological Engineering (BioE):
Students further develop thinking skills and are prepared for emerging careers through topics such as genetic engineering, biofuels, and biomanufacturing. Our students engage in developing energy and agricultural sustainability solutions. They research, design, finance, and build projects like a biodiesel reactor capable of producing enough diesel to run our engineering bus at a cost of only fifty cents per gallon. We develop a process to convert glycerin, a biodiesel by product, into a fuel to melt aluminum into castings for use in the Computer Integrated Manufacturing program. We also build a Solar Aquaphonics system to produce fish and vegetables for needy families and our students learn how to grow freshwater pearls to make into custom jewelry.

Civil Engineering and Architecture (ACE Mentoring):
The ACE Mentor Program’s mission is to engage, excite and enlighten high school students to pursue careers in architecture, construction, and engineering. Students use Revit to design buildings then they create a scale 3d model. Students visit engineering firms, construction companies and their job sites.

Computer Integrated Manufacturing:
Students learn about manufacturing processes, product design, robotics, and automation. They learn to program and control Computer Numeric Control machinery and microcontrollers to create prototypes such as remote controlled race cars, biodiesel generators, plastic extruders, hydrogen fuel systems, TALOS suites (Iron Man), four axis CNC mills, and many other projects.

Capstone Course - Engineering Design and Development:
Students identify an issue and then research, design, and test a solution, ultimately presenting their solution to a panel of engineers. Some examples of projects students will create are: desktop 4axis CNC mills, a personal water purification system for hiking and camping, and plastic extruders to create filament for a 3d printer.

https://www.pltw.org/our-programs/engineering
FOCUSED ON RESEARCH & PROBLEM SOLVING

The rigorous and relevant four-course PLTW Biomedical Science sequence allows students to investigate the roles of biomedical professionals as they study the concepts of human medicine, physiology, genetics, microbiology, and public health. Students engage in activities such as investigating the death of a fictional person to learn content in the context of real-world cases. They examine the structures and interactions of human body systems and explore the prevention, diagnosis, and treatment of disease, all while working collaboratively to understand and design solutions to the most pressing health challenges of today and the future.

The foundation courses are:

**Principles of Biomedical Science**
In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person’s life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

**Human Body Systems**
Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis. Exploring science in action, students build organs and tissues on MANIKEN® skeletal models; use data acquisition software to monitor body functions, such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.

**Medical Interventions**
Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through cases, students learn about a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Knowledge in biomedical sciences paves the way for a wide range of careers. A small sample of recent graduates who completed at least one PLTW Biomedical Science™ course reveals the array of opportunities: some students pursued post-secondary studies in microbiology, pharmacy, chemistry, nursing, nutrition and dietetics, or neurobiology; others enrolled in medical or dental school; and others began careers in forensic science or started research projects focused on immunology and cancer.

http://www.pltw.org/our-programs/biomedical-science
WHERE DREAMS BECOME A REALITY!

AVID (Advancement Via Individual Determination) has been on the campus of Dunbar High School since 2008. It is an academic, regularly scheduled elective class taken during the school day, with 16 sections offered from the 9th – 12th grade level. Seven teachers instruct AVID utilizing the block schedule. AVID is based on the WICOR method which uses writing as a tool of learning, collaborative grouping, organization, and inquiry as methods. The main components of the program are: academic instruction, tutorial support, motivational, organizational and leadership activities. The mission of AVID is to ensure that ALL students, especially those students who are in the middle and those who represent the traditional underrepresented groups:  HTTP://WWW.AVID.ORG

- Will succeed in rigorous curriculum
- Will complete a rigorous college preparatory path
- Will enter mainstream activities and volunteer opportunities in and out of school
- Will increase their opportunity of enrollment in four-year colleges
- Will become educated and responsible participants and leaders in a democratic society

ALL AVID STUDENTS ARE ACCEPTED INTO A COLLEGE OR UNIVERSITY

Some of the colleges and universities that AVID students attend

- Alabama State
- Alabama A&M
- Bethune Cookman
- Duke
- Florida A & M
- Florida International
- Florida Memorial
- Florida Polytechnic
- Florida Southern
- Florida Southwestern State
- Hodges
- Jacksonville State
- Johnson & Wales
- Keiser
- Kentucky State
- Macalester
- Rasmussen
- Santa Fe State
- St. Leo
- University of Central Florida
- University of South Florida
- University of Florida

Awarded over $1.7 Million in scholarships

- Edison Presidential
- Central District
- Edna Swan
- Destination Graduation
- Alabama A & M Tuition
- Take Stock
- Take Stock Housing
- Southwest Florida Community Scholarship
- Keiser University Achievement Award
- Carrol University Tuition
- Alabama State Tuition
- GI Bill
- Hillmeyer Tremont
- Florida Polytechnic Tuition
- Daughters of the American Revolution
- Dunbar Heritage
- Peachey’s
- Rotary South
- Rotary East
- Delta Sigma
- Bruce L. Schiener
- Florida Memorial Alumni Association
- Suncoast Federal Credit Union
## Academic Clubs and Sports

### Clubs and Activities

<table>
<thead>
<tr>
<th>A-Team</th>
<th>IT Internships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Club</td>
<td>LAN Party</td>
</tr>
<tr>
<td>AVID</td>
<td>Literacy Club</td>
</tr>
<tr>
<td>Chorus</td>
<td>Math Team</td>
</tr>
<tr>
<td>CROP</td>
<td>Marching Band</td>
</tr>
<tr>
<td>Cheerleading</td>
<td>Mock Trial</td>
</tr>
<tr>
<td>Destination Graduation</td>
<td>Mu Alpha Theta</td>
</tr>
<tr>
<td>Drama</td>
<td>National Honor Society</td>
</tr>
<tr>
<td>Engineering Team</td>
<td>Student Government</td>
</tr>
<tr>
<td>Fellowship of Christian Athletes</td>
<td>Scholars Club</td>
</tr>
<tr>
<td>The Film Club</td>
<td>Science Olympiads</td>
</tr>
<tr>
<td>Future Business Leaders of America</td>
<td>Step Team</td>
</tr>
<tr>
<td>Future Educators of America</td>
<td>Tiger Tech Club</td>
</tr>
<tr>
<td>GO4IT - Girls Opting for information Technology</td>
<td>Odyssey of the Mind</td>
</tr>
<tr>
<td>Guitar Club</td>
<td>World Language Fair</td>
</tr>
<tr>
<td>JROTC - Junior Reserve Officer Training Corp</td>
<td>Yearbook</td>
</tr>
<tr>
<td>HOSA - Health Occupation Students of America</td>
<td>Young Life</td>
</tr>
</tbody>
</table>

### Sports Programs

#### Fall Sports
- Bowling
- Cross Country
- Football
- Golf
- Swimming
- Volleyball

#### Winter Sports
- Basketball
- Soccer
- Wrestling

#### Spring Sports
- Baseball
- Softball
- Tennis
- Track
Awards and Accomplishments

- A Microsoft Showcase School, A Microsoft Innovation School and the 1st Microsoft Certified High School in the World; A Microsoft Global Forum participant in Barcelona, Spain
- An Adobe featured school for IT certification and A “Model School for Tech Success” by CompTIA Education Foundation
- A Magnet School of Excellence and Distinction and a 4 Time Merit Award winner
- 1st Place and 3rd Place Worldwide Champions; Two 1st Place and 3rd Place National Champions for Microsoft Office
- Numerous award-winning teachers and coaches – Teachers of the Year, Coaches of the Year, Golden Apple winners and finalist, Teachers of Distinction, plus, Microsoft Innovative Expert Educators
- Students in the STEM programs perform higher than the District and State on standardized tests
- Over 4,100 IT professional computer certification tests passed to date by students & faculty
- STEM students excel in the Florida, National, and International Science and Inventors Fair
- State Finalist for Energy Whiz competition for the State of Florida
- Math Team top performers for Lee County and the State of Florida
- Engineering students placed in the Top 3 in the Florida Astronaut Challenge – NASA Kennedy Space Center; Placed 1st and 3rd in Engineering Olympics; Seaman’s We Can Change the World Competition – Best in Florida and Top 16 Nationally; National AXO Engineering completion winner
- Biomedical students took 2nd Place for the National Pharmacy is Right for Me Innovation Challenge and HOSA team took some 1st Place through 3rd Place awards at HOSA Regional meets
- Received 3 award recognitions for effective business partnerships with Adobe and Microsoft at the 2010 STEM Florida Conference.
- Showcased as “The Standard” for Information Technology in the N.C.T.E.F. Guide developed with Microsoft Learning Foundation
- Awarded the “2010 Transformation Award” by Southwest FL Regional Technology Partnership.
- IT Florida Finalist in the Excellence in IT Leadership | Finalist for Excellence in Bridging the Digital Divide
- Principal, Carl Burnside was selected as the 2012 Principal of the Year Finalist for the State of Florida and as 1 of 4 Finalists for the 2007-2008 Florida Council of Instructional Technology Leaders (FCITL) for the State of Florida

DUNBAR HIGH SCHOOL
3800 East Edison Avenue
Fort Myers, Florida 33916
Phone (239) 461-5322
Fax (239) 461-5110
Web: http://dhs.leeschools.net