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

We are a Microsoft School
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.

http://www.ibo.org

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. The core includes a Professional and Personal Skills class, along with students developing a language portfolio, and a Reflective Project. Finally, students should complete a Service Learning piece that relates to the Reflective Project and their area of study.

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 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

IB Mission Statement: The International Baccalaureate® aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.
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 24 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+, Aruba Networks, as well as the Microsoft Technology Associate: Server, Networking, Operating Systems, Security, Mobility and the Microsoft Certified Solution Associate: Server and Windows Operating System certifications. Students can also take an elective in PLTW Cyber Security. https://partners.comptia.org/

https://www.pltw.org/our-programs/pltw-computer-science-curriculum

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. Students take PLTW AP Computer Science as the upper tier of this track.

https://www.pltw.org/our-programs/pltw-computer-science
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 (IED)

Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3-D modeling software, and use an engineering notebook to document their work. Students learn to use tools and equipment such as drills, saws, 3-D printers, and a CNC plasma cutter to design and develop their hands-on projects. Students are also given the opportunity to earn an industry certification in Autodesk® Inventor®.

Principles of Engineering (POE)

Through solving engaging and challenging problems, students explore a broad range of engineering topics including mechanisms, the strength of structures and materials, and automation. Students develop their skills in problem solving, research, and designing while learning strategies for collaboration, design process documentation, and presentation. During the final semester, students use VEX® components to design, build, and program a robot to compete against classmates in a grand challenge. The challenge requires use of all of the skills learned throughout the course. This highlights collaboration, 3-D modeling, designing, building, and programming.

Computer Integrated Manufacturing (CIM)

Manufactured items are part of everyday life, yet most students have not been introduced to the high-tech, innovative nature of modern manufacturing. This course illuminates the opportunities related to understanding manufacturing. At the same time, it teaches students about manufacturing processes, product design, robotics, and automation. Students use Autodesk® Inventor® and HSM Pro® to design desired manufactured parts. The machinery used to manufacture parts are a Haas TM1P CNC mill and a Haas TL1 lathe. Students can earn a virtual manufacturing badge recognized by the National Manufacturing Badge system.

Engineering Design and Development (EDD)

The knowledge and skills students acquire throughout PLTW Engineering come together in the Engineering Design and Development course. Students identify an issue, then research, design, and test a solution, ultimately presenting their solution to a panel of engineers. Students apply the professional skills they have developed to document a design process to industry standards, thus completing Engineering Design and Development ready to take on any post-secondary program or career. Past students' projects have included a t-shirt that can charge small electronic devices, cooling systems for cars when the ignition and engine are not engaged, an electronic pain-relieving knee-sleeve, and a small-scale trash compactor.

Engineering Extracurriculars

FIRST Robotics combines the excitement of sport with the rigor of science and technology. We call FIRST Robotics Competition the ultimate sport for the mind. High-school student participants call it "the hardest fun you'll ever have." Strict rules, limited resources, and an intense six-week time limit challenge teams of students to raise funds, design a team "brand," hone teamwork skills, and build and program an industrial-size robots to play a difficult field game against like-minded competitors. It is as close to real-world engineering as a student can get. Volunteer professionals mentor and lend their time and talents to guide each team. Each season ends with an exciting FIRST Championship.

https://www.pltw.org/our-programs/engineering
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
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

DUNBAR STUDENTS ARE UNIVERSITY AND COLLEGE BOUND

- Alabama A & M
- Amherst
- Barnard
- Berkeley
- Bethune Cookman
- Bucknell
- Colby
- Colgate
- Columbia
- Cornell
- Duke
- Emory
- Florida A & M
- Florida Atlantic University
- Florida International
- Florida Polytechnic
- Florida Southern
- Florida Southwestern State
- Full Sail
- Grinnell
- Harvey Mudd
- Hodges University
- Johns Hopkins
- Johnson & Wales
- Keiser University
- Lamar
- Macalester
- Massachusetts Institute of Technology
- Middlebury
- Naval Academy
- Nova Southeastern University
- Olin
- Purdue
- Rasmussen College
- Swarthmore
- Stetson
- Stony Brook
- Texas A & M
- University of California at Berkley
- University of Central Florida
- University of Chicago
- University of Cincinnati
- University of Florida
- University of Miami
- University of South Florida
- Washington University
- Wellesley
- West Point
- Wesleyan

Awarded Millions in Scholarships Yearly

- Edison Presidential
- Bright Futures
- Central District
- Cloud Peak
- Edna Swan
- Destination Graduation
- Alabama A & M Tuition
- Take Stock
- Southwest Florida Community Scholarship
- Keiser University Achievement Award
- Carral 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

- A-Team
- Art Club
- AVID
- Chorus
- Cheerleading
- Code Quest
- College Reach Out Program (CROP)
- CyberPatriot
- Destination Graduation
- Drama Club
- Dungeons & Dragons
- E.L.I.T.E. (Engaging Ladies' Intellect Through Empowerment)
- Esports League
- Engineering Team (Tiger Engineering)
- First Robotics
- Fellowship of Christian Athletes (FCA)
- French
- The Film Club
- Future Educators of America
- Girls Opting for Information Technology (GO4IT)
- Junior Reserve Officer Training Corp (JROTC)
- Health Occupation Students of America (HOSA)
- IT Internships
- Kappa League
- Latinos in Action
- LAN Party
- Literacy Club
- Math Team - Mu Alpha Theta
- Marching Band
- Mock Trial
- National Honor Society
- National Technology Honor Society
- Rho Kappa Honor Society
- Robotics Team (First Robotics)
- Scholars Club
- Student Government
- Step Team
- Society for Hispanic Professional Engineers (SHPE Jr.)
- Technology Student Association (TSA)
- Tiger Tech
- World Language Fair
- Yearbook
- Young Life
- Youth in Government

Sports Programs

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

Winter Sports
- Basketball
- Girls Weightlifting
- Soccer
- Wrestling

Spring Sports
- Baseball
- Boys Weightlifting
- 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
- A “Model School for Tech Success” by CompTIA Education Foundation
- A Magnet School of Excellence and Distinction and a 4 time Merit Award winner
- Two 1st Place, One 3rd Place, & One 4th Place Worldwide Champions Microsoft Office
- Three 1st Place, Two 2nd Place and One 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
- Award Winning JROTC Program
- Thousands of IT professional computer certification credentials earned 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, the State of Florida, and Nationally
- 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 winner, Rookie Inspiration Award – First Robotics Competition
- 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 STEM Florida Conference
- Showcased as “The Standard” for Information Technology education in the N.C.T.E.F. Guide developed with Microsoft Learning Foundation
- Awarded the “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 Principal of the Year Finalist for the State of Florida and as 1 of 4 Finalists for the Florida Council of Instructional Technology Leaders (FCITL)