



# 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 Zones

Featuring Advanced Technology  
Certifications and College  
Preparatory Biomedical and  
Engineering Programs



We are a Microsoft School



Rev 22-23

# International Baccalaureate 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.

**Creativity, Activity, & 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 the student's choosing.

[HTTP://WWW.IBO.ORG](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 a student-directed 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:** Biomedical Science or Engineering
- **Academy for Technology Excellence:** Digital Design | TV Production | Web Design Marketing Essentials | Network Administrator Game Simulations & Animation AP Computer Science (Programming)
- **JROTC Leadership Program**

**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.

# Advanced 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 24 industry standard IT computer certifications, such as the Microsoft Office Specialist: Word, PowerPoint, Excel, Outlook, Access, CompTIA ITF+, A+, Network+, Server+ and Security+, as well as Information Technology Specialist: Device Configuration & Management, Networking, Cloud Computing, Cybersecurity, and Network Security. Additionally, students can also take an additional elective in **Cybersecurity and/or Marketing Essentials** and earn certifications in Cisco and/or the Entrepreneurship for Business, respectively.

[HTTPS://COMPTIA.ORG/](https://comptia.org/) [HTTPS://WWW.MOSCHAMPIONSHIP.COM/](https://www.moschampionship.com/) [HTTPS://CERTIPORT.PEARSONVUE.COM/](https://certiport.pearsonvue.com/)



Microsoft Office Specialist



## Academy for Digital Excellence

The Academy for Digital Excellence program offers **Web Design, Digital Design, and TV Production** courses that engage students in the digital arts and marketing. Students will gain hands-on experiences that will lead to industry standard IT certifications in Adobe Photoshop, Illustrator, InDesign, Dreamweaver, Flash, & Premiere Pro. Plus, Information Technology Specialist: HTML and CSS, HTML5 and JavaScript. Dunbar High School has a state-of-the-art TV production studio complete with sound booth, studio cameras, green screen, and production editing software.

[HTTP://WWW.ADOBE.COM/EDUCATION/CERTIFICATION-PROGRAMS.EDU.HTML](http://www.adobe.com/education/certification-programs.edu.html)

Earn your Adobe Certified Associate credential.



## Academy for Game Design & Programming Excellence



Earn your Adobe Certified Associate credential.



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 to using industry standard software and tools to provide students these amazing key skills. Students enrolled in the game design program will gain the skills necessary to receive Autodesk 3D Studio Max and Unity certification, as well as Adobe Flash, Illustrator, and Photoshop credentials. Game Design and programming use a variety of hardware and software tools. Students take **AP Computer Science** courses as the upper tier of this track for potential college credit.

[HTTPS://WWW.PLTW.ORG/OUR-PROGRAMS/PLTW-COMPUTER-SCIENCE](https://www.pltw.org/our-programs/pltw-computer-science)

# 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 (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 they 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 unite 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 rigors of science and technology. The FIRST Robotics Competition is 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 robot 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](https://www.pltw.org/our-programs/engineering)



# Biomedical College Preparatory Program



## Project Lead the Way (PLTW) 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.



CSI Investigations

#### 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. Other potential career paths students have pursued after this program include agricultural/veterinary sciences and emergency medical technician.

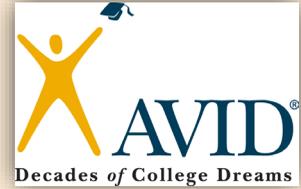
[HTTP://WWW.PLTW.ORG/OUR-PROGRAMS/BIOMEDICAL-SCIENCE](http://www.pltw.org/our-programs/biomedical-science)



# AVID (Advancement Via Individual Determination)

## 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 offered from the 9th – 12th grade. AVID is based on the WICOR method which uses writing as a tool of learning, collaborative grouping, organization, and inquiry as teaching strategies. 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 represent traditionally underrepresented groups:



- 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 for enrollment in four-year colleges
- Will become educated and responsible participants and leaders in a democratic society

[HTTP://WWW.AVID.ORG](http://www.avid.org)

## DUNBAR STUDENTS ARE COLLEGE AND UNIVERSITY 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 University  
Grinnell  
Harvey Mudd  
Hodges University  
Johns Hopkins  
Johnson & Wales  
Keiser University  
Lamar  
Macalester  
Massachusetts Institute of Technology  
Middlebury  
Naval Academy  
Nova Southeastern University  
Olin  
Princeton  
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 Annually

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  
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

## College-Level Course Offerings – Advanced Placement

DHS offers students a variety of opportunities to excel in college-level coursework including Advanced Placement (AP); Dual Enrollment (DE) through FSW, FGCU, and FMTC; and Cambridge (AICE), across all disciplines.

AP English Language  
AP English Literature  
AP Spanish Language

AP World History  
AP US History  
AP Psychology

AP Statistics  
AP Pre-Calculus  
AP Calculus

AP Computer Science  
AP Computer Applications  
AP Chemistry

# Academic Clubs and Sports

## Clubs and Activities

A-Team  
 Art Club  
 AVID  
 Chorus  
 Cheerleading  
 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)  
 FGCU Project TRIO  
 First Robotics  
 Fellowship of Christian Athletes (FCA)  
 French Club  
 Future Educators of America  
 Girls Opting for information Technology (GO4IT)  
 Junior Reserve Officer Training Corp (JROTC)



Health Occupation Students of America (HOSA)  
 Internships  
 Kappa League  
 Latinos in Action  
 Literacy Club  
 Math Team - Mu Alpha Theta  
 Marching Band  
 Mock Trial  
 National Honor Society  
 Omega Lamplighters  
 Raiders  
 Science Olympiads  
 STEM @Work  
 Student Government Association (SGA)  
 Society for Hispanic Professional Engineers (SHPE Jr.)  
 Tabletop Gaming Club  
 Technology Student Association (TSA)  
 Tigers @ AI (artificial intelligence/machine learning)  
 World Language Fair  
 Yearbook  
 Young Life



## Athletics

### 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

- Declared 1st Microsoft Certified High School in the WORLD
- Microsoft Showcase School / Microsoft Innovation School, Adobe Featured School, Amazon Future Engineering Program School, CompTIA School for Tech Success, A Microsoft Global Forum participant in Barcelona, Spain
- The City of Ft. Myers proclaimed January 18th as Dunbar High School Day
- National Merit Scholars
- JROTC was recognized as an Honor Unit with Distinction, the JROTC Raiders Team placed top three in the state, plus the Academic and Leadership Team were national qualifiers, and the Drone Team was the Regional Drone Runner-Up
- The Technology program inspired three first place winners for the Microsoft Office Worldwide Championship, six National Champions, and twenty-five State Champions; AFA CyberPatriot Florida state winners and national top placements; Technology Student Association (TSA) Florida State winners and national top placements
- Magnet School of Excellence and 5-Time Merit Award Winner
- Numerous award-winning teachers and coaches – Teachers of the Year, Coaches of the Year, Golden Apple winners and finalists, Teachers of Distinction, Microsoft Innovative Expert Educators
- Thousands of IT professional computer certification credentials earned by students & faculty
- STEM students excel in the State, National, and International Science and Inventors Fair
- Two Rising Stars from the News-Press People of the Year Awards
- Math Team top performance for Lee County, the state of Florida, and the United States
- Engineering students placed in the Top 3 in the Florida Astronaut Challenge – NASA Kennedy Space Center; Placed 1<sup>st</sup> and 3<sup>rd</sup> in Engineering Olympics; Seaman's We Can Change the World Competition – Best in Florida and Top 16 nationally; National AXO Engineering winner; First Robotics Competition: Rookie Inspiration Award and Design Inspiration Award
- Biomedical students won 2nd place for the National Pharmacy is Right for Me Innovation Challenge and the 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 National Career Technical Education Foundation Guide developed with Microsoft Learning Foundation; Awarded the "Transformation Award" by Southwest Florida 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); Presented to congress about Dunbar STEM programs.



**Mission Statement:** *Dunbar High School will cultivate young individuals who will possess a conceptual understanding of local and global situations through inquiry and collaboration. With a focus on developing the holistic individual, Dunbar High School will promote the skills of communication, research, self-management, deep-thinking abilities, cultural awareness, and technological innovation to ignite students' passion for lifelong learning, achievement, and interpersonal relationship-building, preparing its students for success in global competition.*

## DUNBAR HIGH SCHOOL

*"Achievement is the Expectation"*

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