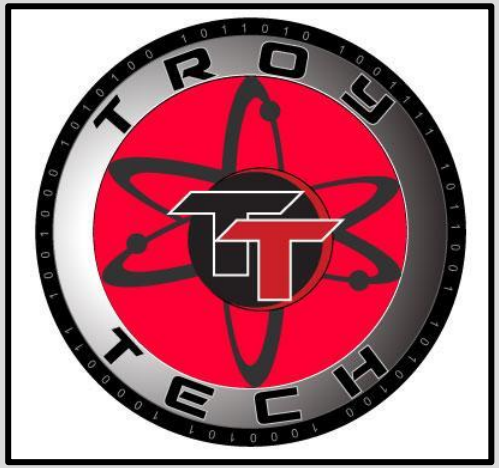
Information Night:

Troy Tech
International Baccalaureate & Cambridge Programs

5:00 - 5:30 p.m. followed by Q&A

January 18, 2023

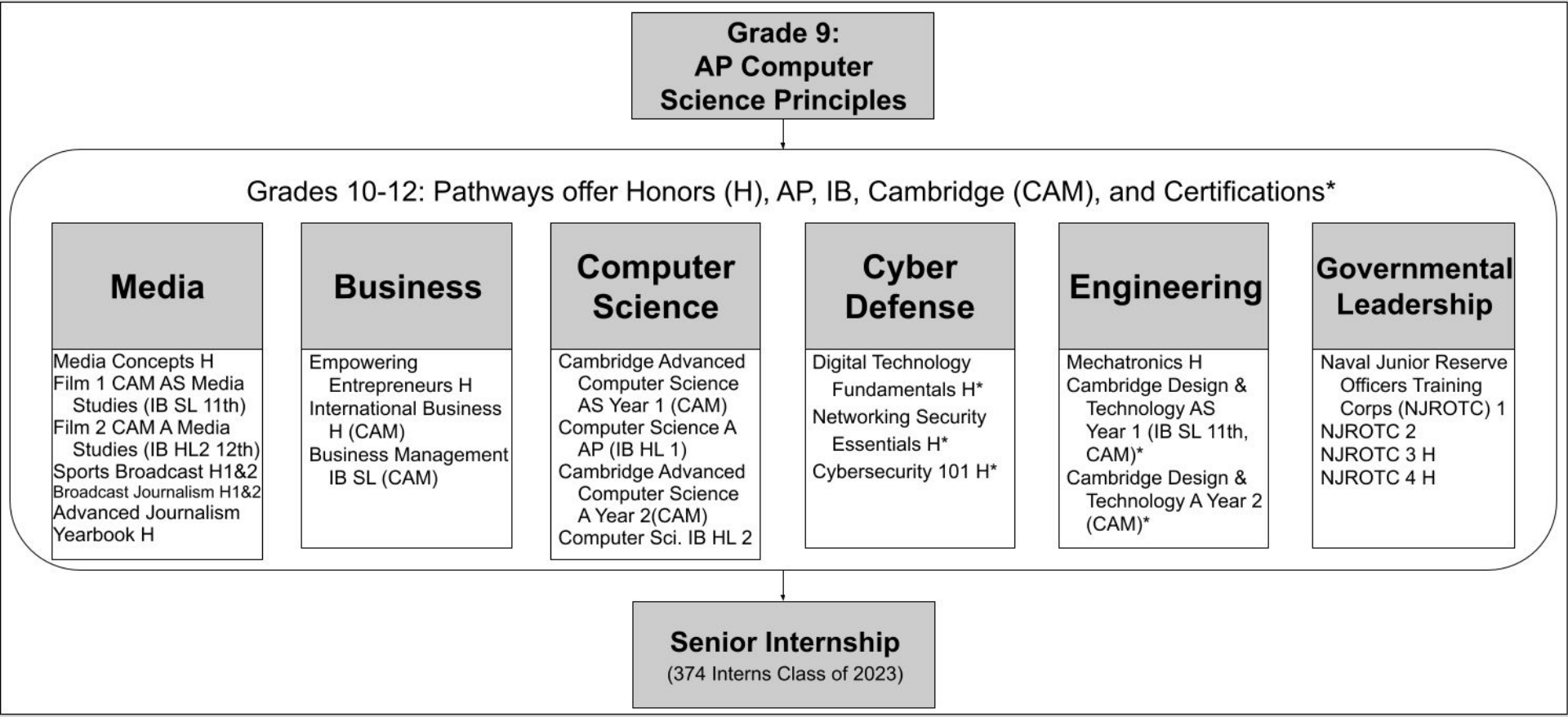


Troy Tech

troytech.troyhigh.com

Nationally recognized four year STEM-based magnet program
Established in 1986 - Unique to Troy High School
1700+ students/69% of Troy High School participates in Troy Tech

Troy Tech


Grade 9:
AP Computer
Science Principles
Grades 10-12: Pathways offer Honors (H), AP, IB, Cambridge (CAM), and Certifications*
Media
Media Concepts H
Film 1 CAM AS Media Studies (IB SL 11th)
Film 2 CAM A Media Studies (IB HL2 12th)
Sports Broadcast H1&2
Broadcast Journalism H1&2
Advanced Journalism
Yearbook H
Business
Empowering Entrepreneurs H
International Business H (CAM)
Business Management IB SL (CAM)
Computer Science
Cambridge Advanced Computer Science AS Year 1 (CAM)
Computer Science A AP (IB HL 1)
Cambridge Advanced Computer Science A Year 2(CAM)
Computer Sci. IB HL 2
Cyber Defense
Digital Technology Fundamentals H*
Networking Security Essentials H*
Cybersecurity 101 H*
Engineering
Mechatronics H
Cambridge Design & Technology AS Year 1 (IB SL 11th, CAM)*
Cambridge Design & Technology A Year 2 (CAM)*
Governmental Leadership
Naval Junior Reserve Officers Training Corps (NJROTC) 1
NJROTC 2
NJROTC 3 H
NJROTC 4 H
Senior Internship
(374 Interns Class of 2023)

AP Computer Science Principles

- Required 9th grade course, no programming experience needed
- Sets the foundation for the 6 Troy Tech Pathways
- In May 2022, 470 Troy students took exam with an 94% pass rate
- An introductory college-level course about the field of computer science
- Students learn to design and evaluate solutions as well as how computing innovations and systems like the internet work and impact society

This award shows that Troy has a large number of female students that take AP Exams in Computer Science

Media Pathway

- Non-Fiction:Media Concepts H, Broadcast Journalism H 1 & 2 Omnia, Sports Broadcast H 1 & 2, Advanced Journalism Oracle newspaper, Yearbook H
- Fiction: Film 1 & 2 Cambridge AS & A Media Studies/IB SL & HL2, Troy Productions
- State of the Art Studio with Green Screen and Control Room

Business Pathway

- Courses: Empowering Entrepreneurs H, International Business H, Business Management IB SL (IB and Cambridge options)
- Future Business Leaders of America (FBLA) is incorporated into pathway. In 2022, FBLA competed at both State and National conferences.
  - Competition at conferences, Categories range cs to sports management
  - Leadership: Campaign for positions, Lead community service projects
  - Networking: Meet like minded students, Connect with professionals

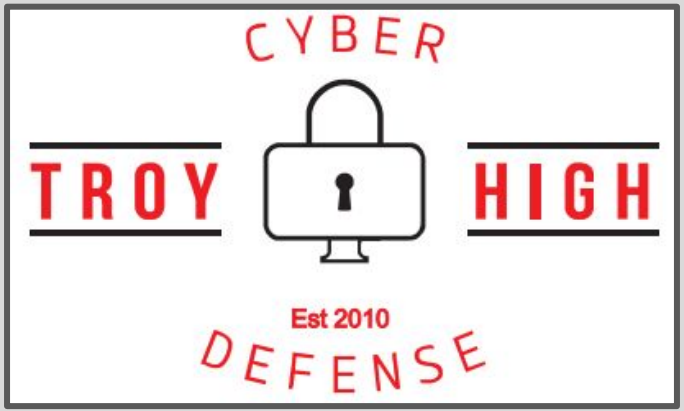
Computer Science Pathway

- Courses: Cambridge Advanced Computer Science AS Level Year 1, Computer Science A AP (IB HL 1), Cambridge Advanced Computer Science A Level Year 2, Computer Science IB HL 2
- 4 years of honors-level programming courses available
- Computer science AP, IB, and Cambridge exams qualify for college credit
- College Board recognition #1 CS program in the world
- Competitive clubs, programming contests, and Esports team

```
public class Hello
{
        public static void main(String[] args)
        {
                System.out.println("Hello World!");
        }
}
```

Cyber Defense Pathway

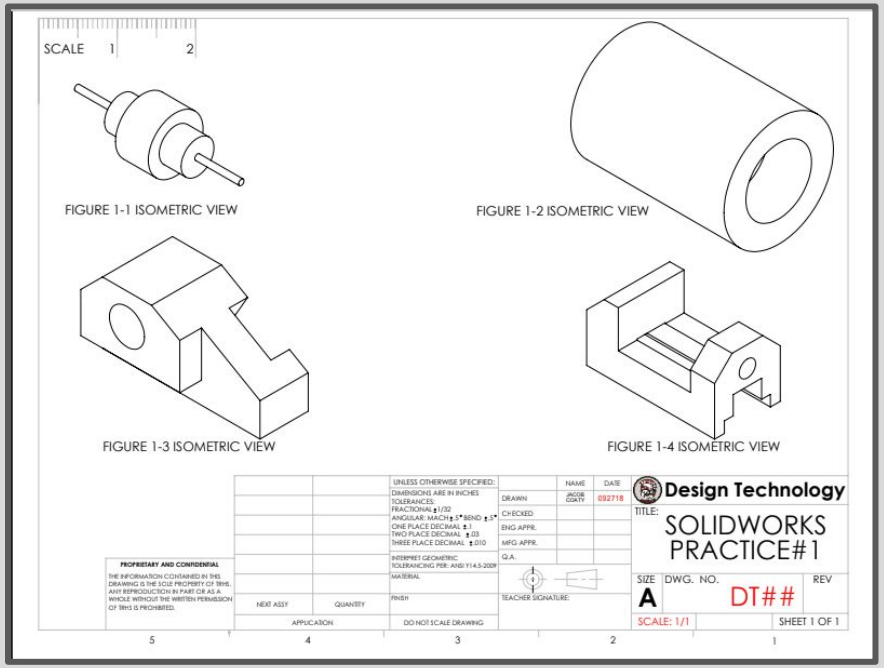
- Courses: Digital Technology Fundamentals H, Networking Security Essentials H, & Cybersecurity 101 H with industry-level certifications in CompTIA A+, CompTIA Networking+, and CompTIA Security+.
- Three-time CyberPatriot National Champions 2021/2019/2018; 2022 Presidential Cybersecurity Education Award
- Largest competitive program in the U.S. with 300 students
- Website: stubblefield.troyhigh.com



Engineering Pathway Presentation

- Courses: Cambridge Design & Technology AS Level Year 1 (IB SL 11th), Cambridge Design & Technology A Level Year 2, Mechatronics H, Design Technology IB SL
- Students learn the design cycle and have access to engineering workshop with power tools and 3D printers
- SolidWorks CSWA certification, Cambridge and IB options
- FIRST Robotics Team participated in 2022 National build competition. @team3952

Engineering Pathway



SolidWorks CAD instruction - Design projects include cardboard chair

Leadership Pathway: Naval Junior Reserve Officers Training Corps

troynjrotc.org

Leadership Pathway NJROTC

- Close to 300 Cadets
- Schedule each week: 2 days of Academics, 2 days of Physical Training (PE Credit), Uniform Day
- Opportunities for peer leadership experience
- Honors credit grades 11 & 12
- Optional competitive teams after school including:
  - Drill Teams (Team Black and Team Red)
  - Marksmanship
  - Quizbowl
  - Cyber
  - Orienteering
  - Seaperch (Underwater robotics)

Senior Internship

- 150-hour experience in-person (or virtual) at a business or university - a defining experience for future goals and stands out on college app
- 400 seniors earn internship credit each summer guided by Troy staff advisors
- Over 1000 partners in industry including Boeing, Peraton, Stanford, medical (City of Hope), science research (USC, UCI, CSUF), and many more

Troy High School International Baccalaureate

Diploma Program

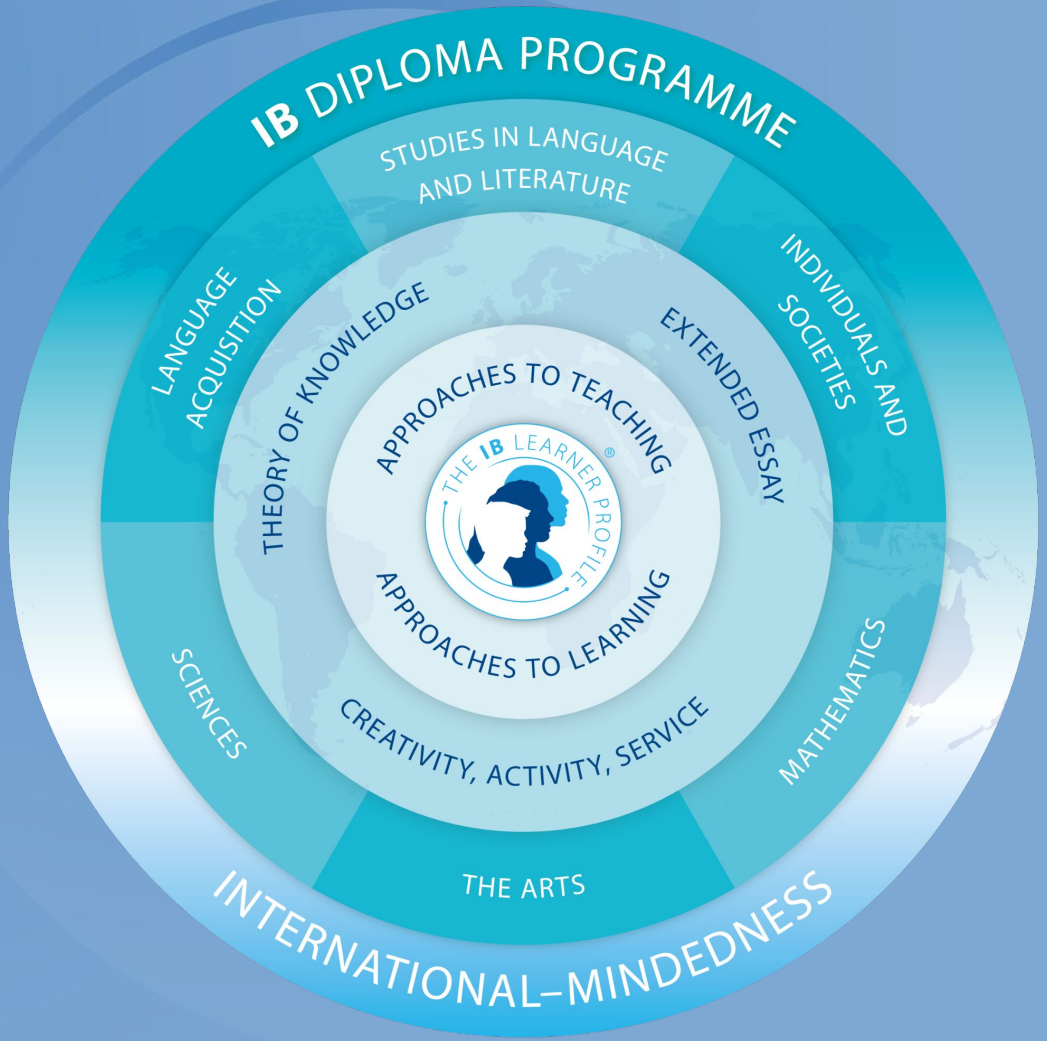
January 18, 2023

IB Diploma Program

- 2-year Diploma Program for highly motivated 11th and 12th grade students
- One of the most rigorous course progressions
- Dedicated to the betterment of the student and the world
- Develops a balanced individual colleges appreciate and recognize

Diploma Program Model

ibo.org



IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

As IB learners we strive to be:

INQUIRERS
We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

KNOWLEDGEABLE
We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

THINKERS
We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.

COMMUNICATORS
We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

PRINCIPLED
We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

OPEN-MINDED
We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

CARING
We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

RISK-TAKERS
We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

BALANCED
We understand the importance of balancing different aspects of our lives—intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.

REFLECTIVE
We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

The IB learner profile represents 10 attributes valued by IB World Schools. We believe these attributes, and others like them, can help individuals and groups become responsible members of local, national and global communities.

The IB experience is not just a way to learn, it's a way of life and, for more than 1,250,000 students each year, the way to a better, more peaceful world.

Recommended Course progression for the completion of the IB Diploma Program at Troy High School

INTERNATIONAL BACCALAUREATE DIPLOMA COURSE PROGRESSIONS

Grades 9-10: In Groups 1-6: complete one pathway of "recommended courses" BEFORE entering the IB program (*AP Computer Science Principles is the 9th grade prerequisite for all Troy Tech courses.

Grades 11-12: Complete one course and assessment in Groups 1-5 plus a Group 6 Art or a second course in Group 3 or 4 (3HL & 3SL)

Grades 11-12: IB Core Requirements: Theory of Knowledge course (embedded within required Philosophy course which satisfies the group 3 requirement), the Extended Essay and Creativity, Activity and Service

Student Grade	Group 1 Language A English *required HL course	Group 2 Language B	Group 3 Individuals and Society (Optional Group 3)	Group 4 Sciences	Group 5 Mathematics Sample pathways, please discuss options with your counselor or IB coordinator	Group 6 Arts (Optional, may double in group 3 or 4)	IB Core TOK + Philosophy *required HL course
9 recommended courses	Honors English 1 Cambridge	Chinese 1, French 1 or Spanish 1		Honors Biology or Honors Biology Cambridge	*AP Computer Science Principles (Req. Troy Tech course)	Algebra 2 Honors; Geometry Honors	
10 recommended courses	AP Language & Composition (Cambridge English AS in 2023)	Chinese 2, French 2 or Spanish 2	Honors International Business or Empowering Entrepreneurs Honors	Honors Chemistry	Cambridge Advanced Computer Science AS Year 1; Mechatronics Honors	Precalc or Precalc Honors; Algebra 2 Honors	Media Concepts Honors
11	IB HL 1 English/AP English Lang	IBSL Mandarin, IBSL French or IBSL Spanish Year 1	IBSL Business Management Single Year IBSL 11th or 12th grade options	AP Physics 1 IBHL/SL Year 1; AP Physics 2, or AP Biology Year 1 IBHL or Single Year IBSL; AP Computer Science A Year 1 IBHL; Cambridge Design & Technology AS Level Single Year IBSL 11th or 12th grade	AP Calculus AB/BC IBHL/IBSL Year 1; Math IBSL Single Year IBSL	Cambridge AS Media Studies Single Year IBSL Film or Year 1 IBHL Film; Drawing & Painting Honors Cambridge Year 1 IBHL or Single Year IBSL	IBSL Philosophy *IBHL Year 1
12	AP English Literature *IBHL Year 2	AP Chinese, AP French or AP Spanish Year 2 IB SL (2 year HL optional with approval from teacher)		AP Physics 2 IBHL/SL Year 2; AP Physics C or IB HL Biology Year 2 IBHL; Computer Science IBHL Year 2; Cambridge Design & Technology A Level Single Year IBSL 11th or 12th grade	AP Statistics IBHL/IBSL Year 2; AP Calculus AB/BC or AP Statistics (Optional)	Cambridge A Media Studies Year 2 IBHL Film; IB HL Art Year 2 IB HL	Theory of Knowledge (1st semester) *IB HL Philosophy Year 2 (2nd semester)

Note: The IB 2-year Philosophy course satisfies the Group 3 requirement for ALL IB Full diploma students. It may also count as a second group 3 substitution for group 6

Sample 11th/12th grade Course Schedule

** CAS, EE, TOK both years

YEAR 1	YEAR 2
IB HL1 English	AP/IB HL2 English Literature *
IB SL Language B	AP/IB SL Language * (Chinese, French or Spanish)
IB SL Philosophy (TOK)	TOK /IB HL Philosophy *
AP/IB SL Biology	IBHL Biology *
CAM/IBSL Design Technology* or AP Computer Science A	Free choice or IB HL Computer Science *
IBSL Math*	AP Statistics/free choice
US History	Government/Econ

CAMBRIDGE PROGRAM

TROY HIGH SCHOOL

CAMBRIDGE ASSESSMENT INTERNATIONAL EDUCATION

160+ COUNTRIES

World's largest provider of global education programs

160+ YEARS

Established in the US in 2013

COLLEGE & UNIVERSITY RECOGNITION

—STUART SCHMILL, DEAN OF ADMISSIONS, MIT

"One of the things we find with students who have studied Cambridge International AS and A Levels is that they have a real depth of understanding of the subject matter that they have had classes in, and a real engagement with it."

—RICHARD C. LEVIN, PRESIDENT, YALE UNIVERSITY

"The depth and knowledge displayed by the best A Level students makes them prime targets for America's Ivy League universities."

—CHRISTOPH GUTTENTAG, DEAN OF UNDERGRADUATE ADMISSIONS, DUKE UNIVERSITY

"We think the Cambridge curriculum is superb preparation for university."

"Cambridge AICE Diploma: A passport to success in education, university and work". UCLES August 2018.

CAMBRIDGE LEARNER ATTRIBUTES

INNOVATIVE

and equipped for new and future challenges

REFLECTIVE

as learners, developing their ability to learn

ENGAGED

intellectually and socially, ready to make a difference

RESPONSIBLE

for themselves, responsive to and respectful of others

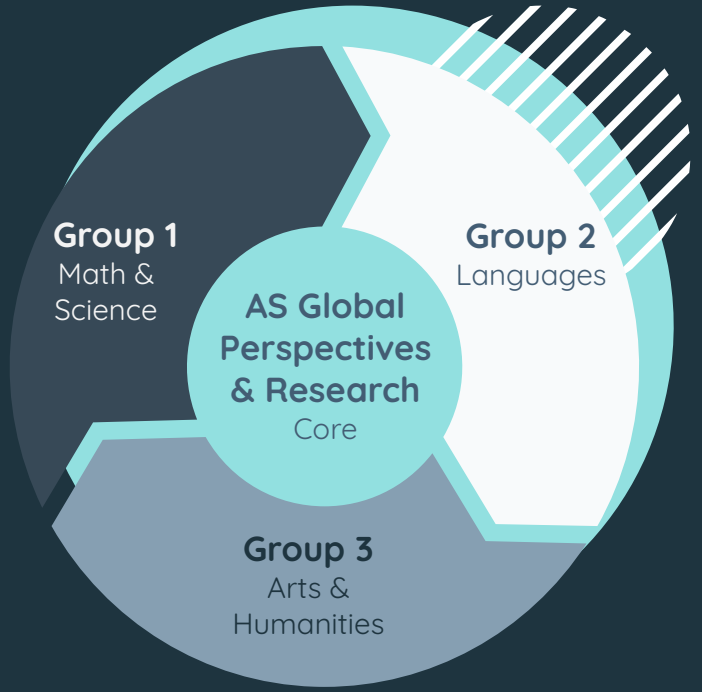
CONFIDENT

in working with information and ideas – their own and those of others

AICE DIPLOMA:
ADVANCED INTERNATIONAL CERTIFICATE OF EDUCATION

Broad, balanced, & *flexible* program of study that allows learners to study a variety of subjects from three different groups:

1. Mathematics & Sciences
2. Languages
3. Arts & Humanities
4. Core: AS Global Perspectives & Research



TRHS CAMBRIDGE PROGRAM: TWO OPTIONS

1. Select A-Level courses/exams
    *AS courses = 1 year
    *A-Level courses = 2 years
2. Full diploma (AICE)

AICE: ADVANCED INTERNATIONAL CERTIFICATE OF EDUCATION

A-LEVEL COURSES

Mathematics
Biology
Physics
Computer Science
Design & Technology

English Language
Chinese
Spanish

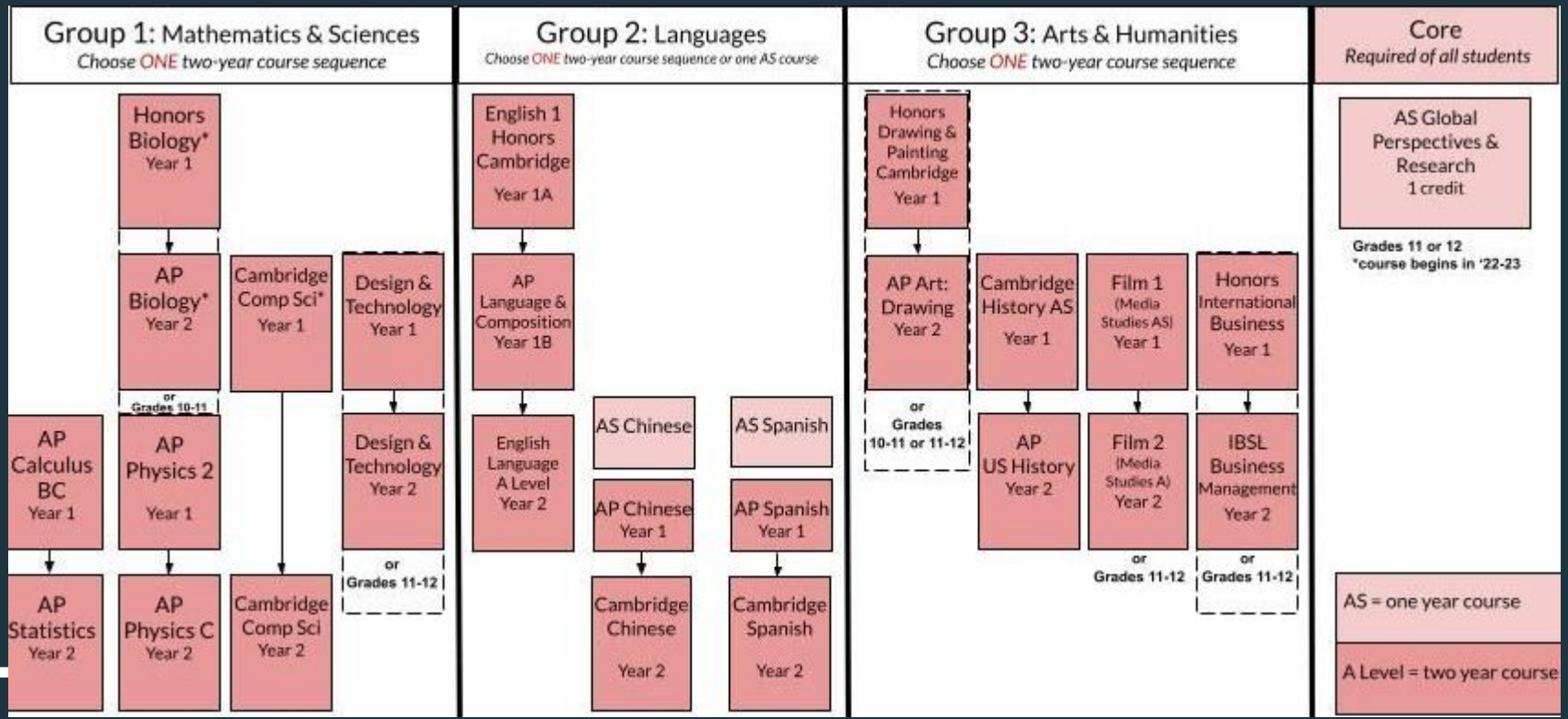
Art & Design
History
Media Studies (film)
Business

AS COURSES

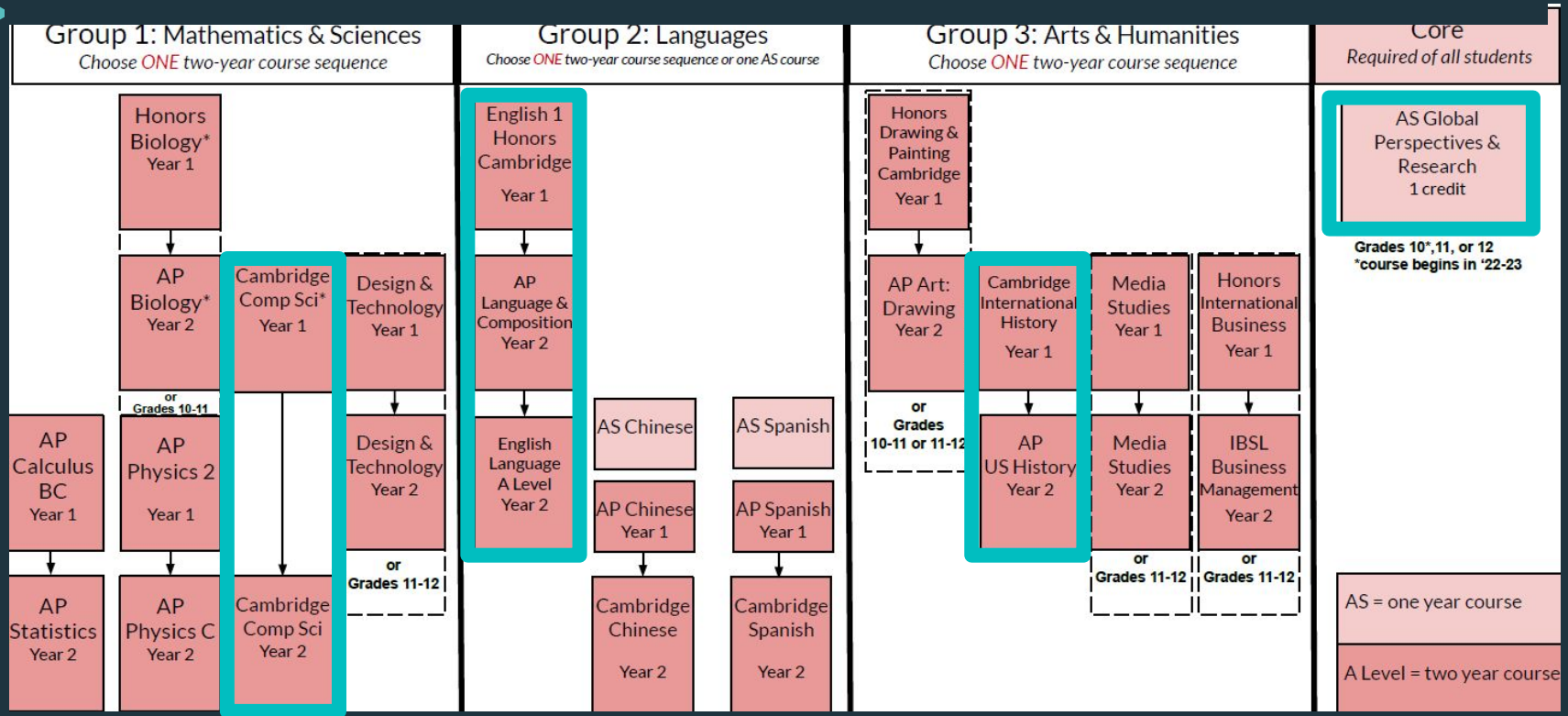
Global Perspectives & Research
Chinese
Spanish

AICE REQUIREMENTS:

7 POINTS FROM 3 SUBJECT GROUPS, PLUS CORE RESEARCH COURSE



SAMPLE STUDENT DIPLOMA PATHWAY



Troy Tech/IB/Cambridge/Honors Testing for Current 8th grade students is **January 21, and 28, 2023** from 7:30-Noon. Check-in at 7:15 a.m. at North Gym.

- Applicants are encouraged to register online for testing at **applicants.troyhigh.com**
- Bring student photo id or passport and printout of 8th grade schedule listing current math course.
- Testing covers midyear eighth grade content in math and English, and the format includes multiple-choice questions and an English essay.
- Notification: By March 1, 2023, notifications will be emailed to all applicants. Acceptance emails will include March registration time and instructions.

6:00 - 7:30 p.m. Troy's Open House includes student panel in the Theater, performances in the Quad, and staff available in the North Gym and classrooms. See handout.