PETERS TOWNSHIP HIGH SCHOOL
COURSE SYLLABUS: **AP COMPUTER SCIENCE PRINCIPLES**

Course Overview and Essential Skills

AP Computer Science Principles is a full-year, rigorous, entry-level course that introduces high school students to the foundations of modern computing. The course covers a broad range of foundational topics such as programming, big data, digital privacy and security, and the societal impacts of computing.

Course Textbook and Required Materials

- Computer Concepts 2016: Enhanced Edition 2017 & ISBN# 978-1-305-65628-4
- Code.org curriculum
    - Instructional guides
    - Formative and summative assessments
    - Rubrics
    - Videos
    - Computational tools
    - Students access to this site
    - H Drive
        - *The code.org curriculum is an approved curriculum by the College Board that provides hands-on activities, program simulations, and assessments that students will use throughout this course*
- Blown to Bits http://www.bitsbook.com
    - An on-line textbook that will be used for current articles and supplemental material throughout the curriculum

Course Outline of Material Covered:

Unit or Topic	Concepts/Skills/Resources	Timeframe
Unit 1: The Internet	• Sending Binary Messages • Encoding and Sending Numbers • Encoding and Sending Text • IP Addresses, Packets, and Redundancy • Routing, Protocols and Abstraction	5 weeks
Unit 2: Digital Information	• Text Compression • Encoding Images • Interpreting Visual Data • Communicating with Visualization • Cleaning Data and Making Summary Tables	6 weeks
Unit 3: Algorithms & Programming	• Designing Algorithms • Procedural Abstraction & Top Down Design • Writing Functions • Loops and Documentation	4 weeks
Unit 4: Building Apps	• Designing Event-Driven Apps • User Input and Variables • Boolean logic and conditionals	7 weeks

	• While loops • Simulations • Arrays • Functions with return values • Processing arrays	
Unit 5: Performance Tasks	• Preparation: Create Performance Task • Preparation: Explore Performance Task	4 weeks

*****Depending on the needs of the class or changes in the school year, the course outline is subject to change.***