

Course	Week	Week	Week	Week	Week
IT 8	-Classroom Expectations & Procedures -File Management -SMART Goals -set up Google Classroom and other LMS -introduce algorithmic constructs (shapes and arguments, functions, variables, if conditional statements, for loops, mouse, key and text input, arrays)	-MYP Unit- -Making Algorithmic Designs (MYP Criteria A, B, C, D) Computational Thinking and Design Process – summative task – p5.js algorithmic constructs / HTML (shapes, shape parameters/arguments, variables, libraries, functions, conditionals)	Data Analysis – summative task – WPM spreadsheet using data from typing quizzes and telling a story using the bar chart as the visualization	Keyboarding Technique – summative task – SMART goal setting – using proper posture and finger technique on a QWERTY keyboard to complete 10 typing tests	Digital and Financial Literacy – summative task – Everfi Ignition Digital Wellness and Safety 1. Connections and Community 2. Safety and Privacy 3. Screen Time vs Online Time 4. Technology and Privacy 5. Rights and Literacy 6. Evaluating Content

Course	September	October	November	December	January	February	March	April	May	June
IT 9	-Classroom Expectations & Procedures -File Management -SMART Goals -set up Google Classroom and other LMS	-MYP Unit – Problem Solving Unit (explore problem solving process and the different ways humans and computers solve problems) MYP Criteria C 2 weeks -introduction to computational thinking -algorithmic framework – the building blocks of programming -summative task – recognize the different types of programming constructs with pseudocode and flowcharts	- MYP Unit- Programming Unit (use p5.js to create programs that work on algorithmic constructs) MYP Criteria A, B, C, D 8 weeks Key Concepts: U1 Draw and Draw with Functions U2 Respond and Draw with Canva U3 Arrays, Loops, Media U4 Motion, Objects, Transformation U5 Final Project -summative task – create programs using shape functions, function libraries, conditionals, event actions, arrays, loops, media, motion, objects			-MYP Unit – Data and Society Unit (learn how information is represented, collected, analyzed, and visualized by computers) (investigate how data is collected online and weigh the potential benefits and harms to individuals and society at large) MYP Criteria C, D 2 weeks -summative task - manipulate data using an infographic to persuade an audience on topic of choice (use Python modules – Matplot lib – four subplots – scatter, histogram, bar chart, pie chart with a story			-MYP Unit – Process Design Unit (discover the programming constructs that allows us to design apps) MYP Criteria A, B, C, D 7 weeks CS4All – App Inventor Unit 0 - Apps Unit 1 – I have a Dream App Unit 2 – Paint Pot App Unit 3 – Game Apps Unit 4 – Magic 8 Ball App Unit 5 – Design Project -summative task - app design project	

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ICT 11 Programming ICTP 11 (4 credits) -Classroom Expectations & Procedures -File Management -SMART Goals -set up Google Classroom and other LMS	Programming Constructs -Bad Choices: An Illustrated Introduction to Computational Thinking -Algorithm Framework - Programming Constructs (flowcharts and pseudocode) (sequencing, selection, iteration, combination)	-Python Programming CMU CS1 Unit 1 – Creating Drawings -basic -colours -shapes	-Python Programming CMU CS1 Unit 2 – Functions, Mouse Events, Properties -functions -mouse events -properties	-Python Programming CMU CS1 Unit 3 – Mouse Motion Events, Conditionals, Helper Functions -mouse motions events -conditionals -helper functions	-Python Programming CMU CS1 Unit 4 – More Conditionals. Key Events, Methods -more conditionals (if-elif-else) -key events -methods	-Python Programming CMU CS1 Unit 5 – Complex Conditionals and More Key Events -complex conditionals -more key events	-Python Programming CMU CS1 Unit 6 – Groups, Step Events, Motion -groups -group methods -step events and motion -special types of motion	-Python Programming CMU CS1 Unit 7 – New Shapes, Local Variables, For Loops, Looping Through Groups -basic -colours -shapes	-Python Programming CMU CS1 Unit 8 – Math Functions, Random Values, and Nested Loops -math functions -random values -nested For Loops	-Python Programming CMU CS1 Unit 9 – Types, Strings, and While Loops (Optional) -types and inputs -strings -string methods -While Loops	-Python Programming CMU CS1 Unit 10 – Lists and Return Values -types and inputs -strings -string methods -While Loops	-Python Programming CMU CS1 Unit 11 – 2D Lists and Board Games -2D lists -board games	-Python Programming CMU CS1 Unit 12 – Final Project -final create project

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ICT 11 Programming ICTP 11 (4 credits) -Classroom Expectations & Procedures -File Management -SMART Goals -set up Google Classroom and other LMS -Academic	Programming Constructs -Bad Choices: An Illustrated Introduction to Computational Thinking -Algorithm Framework - Programming Constructs (flowcharts and pseudocode) (sequencing, selection, iteration,	Programming AI – how to create an AI Tutor using Notebook LM - study guides, flashcards, podcasts, video podcasts AI Usage – images, writing, video, audio, productivity, coding	Programming Python Basics – 30 Days of Python - Day 1 & 2 - customer service chatbot	Programming Python Basics – 30 Days of Python - Day 3 - health BMI chatbot Day 4 - school timetable chatbot	Programming Python Basics – 30 Days of Python – Day 5 – country list Day 6 – tuple problems	Programming Python Basics – 30 Days of Python – Day 7 – set problems Day 8 – dictionaries problems	Programming Python Basics – 30 Days of Python – Day 9 – conditional problems Day 10 – loop problems	Programming Python Basics – 30 Days of Python – Day 11 – functions problems Day 12 – modules problems	Web Design (HTML & CSS) – local and online server – HTML and CSS website Photoshop – using layers, brushes, magic wand, pen, text, eraser, export, save images	Web Design (HTML & CSS) – Photoshop – using layers, brushes, magic wand, pen, text, eraser, export, save images	Vibe AI Assisted Programming – Search Engine Optimization (SEO) website using prompts	Vibe AI Assisted Programming – National Parks Voting app website using prompts	Vibe AI Assisted Programming – Game Design using prompts – designed following project guide

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ICT 11 Programming Pre-AP ICTP 11 (4 credits)	-Classroom Expectations & Procedures	- Python Programming Unit	-Python Chatbots Programming	Unit 1 - Chatbots with Personality	Unit 2 – Recommendation Systems	Unit 3 – Under the Hood	Unit 4 – Graphics and Animation	Unit 5 – Computer Vision	Unit 6 – Internet and Big Data
	-File Management	-Bad Choices: An Illustrated Introduction to Computational Thinking	Unit 0 – What is Computer Science?	The theme of this unit is "Chatbots", and students are introduced to the idea of the Turing Test and the field of natural language processing.	The theme of this unit is "You might also like" and introduces students to recommendation systems such as those used in Netflix and Amazon.	This unit explains to students how their code is eventually translated into binary representations.	The theme of this unit is "Graphics and Animation" and reminds students that many 3D games and movies are built with code.	This unit introduces the field of Computer Vision. It reveals the RGB representations of pixels and provides a first experience with image processing. As image processing can be slow, it also motivates the need for writing efficient code.	This unit emphasizes the recent need to process large amounts of data, thanks to the Internet. Students use large datasets pulled from the Internet to learn searching and sorting algorithms, as well as their complexities.
	-SMART Goals	Introduction to Computational Thinking	This unit introduces Computing Science as the design of algorithms and their implementation using code. It also covers the history of Computing Science, including the first programmer.	• variables, naming, concatenation, input (first example only), lists, modules	• arithmetic operators, loops with range, string/int/float data types, accumulators	• binary, ASCII, bytes, Unicode, string indexing, loops over strings, exponents	Recursion is taught here using a visual recursive tree example, and functions are taught in order to draw pictures with various parameters.	As image processing can be slow, it also motivates the need for writing efficient code.	It reveals the RGB representations of pixels and provides a first experience with image processing. As image processing can be slow, it also motivates the need for writing efficient code.
	-set up Google Classroom and other LMS	-Algorithm Framework - Programming Constructs (flowcharts and pseudocode) (sequencing, selection, iteration, combination)	• problem solving, algorithms, comments, and output	• conditionals (if/else, if/elif, if only), Boolean statements, logical operators (or/and)	• type conversion, list length	• Turtle module, functions and parameters, functions with Turtle, local variables, more Turtle methods, Turtle tutorials (all pages), while loop, while for input	• modules, from... import, 2D arrays, nested loops (images), RGB pixel representations, image processing, tuples, tuples as return values, PIL image module	• making your own module, understanding Python documentation	• list/string indexing from the end, linear search, sorting, selection sort, introduction to complexity,
				• attributes of good software and clean code, code reviews, software engineering	• working with data files, reading files, splitting strings into lists, indexing/accessing elements in lists, comparison operators, operator precedence	• Recursion, three laws of recursion, dictionaries	• appending/concatenating to lists, string formatting for output	• problem solving strategies: break down large problems into smaller ones, test small pieces of code first	• swapping elements, range sub listing (begin/end), list slicing, Binary Search, Algorithm analysis, Big-O Notation (n, n ² , logn), Analysis of: Linear Search, Selection Sort, Binary Search
				• problem solving, algorithms, comments, and output	• syntax and semantic error types, string methods (except 9.5.1), in keyword for lists and strings	• Fruitful functions, sentinel values and validating input, logical operator (not)	• making your own module, understanding Python documentation	• efficiency, using the time module to profile your code	• recursive summation, recursive Fibonacci, binary search analysis proof, remainder (modulo), converting base using fruitful recursion, Python beyond the browser
				• problem solving, algorithms, comments, and output	• function chaining, for loops, break keyword, creating lists from input, integer datatype, addition				
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AP Computer Science Principles 12 (Blended) APCSP 12 (4 credits)	Unit 1 - Digital Information (3 weeks): Students explore the way computers store and represent complex information like numbers, text, images, and sound.	Unit 3 - Intro to App Design (3 weeks) Students design their first app while learning both fundamental programming concepts and collaborative software development processes.	Unit 4 - Variables, Conditionals, and Functions (3 weeks) Students expand the types of apps they can create as they learn how to store information (variables), make decisions (conditionals), and better organize code (functions).	Unit 6 - Lists, Loops, and Traversals (4 weeks) Students learn to build apps that use, and process lists of information. Like the previous unit, students learn the core concepts of lists, loops, and traversals through a series of EIPM lesson sequences.	Unit 7 - Parameters, Return, and Libraries (3 weeks) Students learn how to design clean and reusable code that can be shared with a single classmate or the entire world.	Unit 8 - Cybersecurity and Global Impact (2 weeks) Students research and debate current events at the intersection of data, public policy, law, ethics, and societal impact.	Unit 9 - Create PT (4 weeks) This short unit prepares students to complete the AP® Create Performance Task (PT). Students will have learned the skills and concepts necessary to complete the task in previous units and will even have seen components of the task itself.	Unit 10 - Algorithms (3 weeks) Students learn to design and analyze algorithms to understand how they work and why some algorithms are considered more efficient than others. This short unit is entirely unplugged and features hands-on activities that help students get an intuitive sense of how quickly different algorithms run and the pros and cons of different algorithms.	Exam Prep - (2 weeks) The exam has a time limit of 120 minutes. There are 70 multiple choice questions. 57 of these questions are single select, 5 are single select with a reading about a computing innovation, and 8 are multiple select. This is worth 70% of the total score.	CSP Post-AP - Databases and Using Data in your Apps (20 hours - 17 classes) 5% to final term mark - complete / incomplete
	Major Assessment Project: The unit project asks students to consider and debate issues that arise in modern society due to the digitizing of information.	Major Assessment Project: The unit project asks students to collaborate with a classmate to design an app that can teach others about a topic of shared interest. Students practice interviewing classmates to identify the goals of the project, mockup designs, collaboratively program the app, and run simple user tests. The app itself must include at least three	Major Assessment Project: The unit project asks students to design an app that makes a recommendation based on input information from the user. Students are given a great deal of freedom to choose their topic, design their user interface, and decide how to actually program their app's behavior.	Major Assessment Project: The unit project asks students to spend five days as part of a "Hackathon" project that they have nearly complete independence to scope and design. Students must choose one dataset from the Data Library in AppLab to be a component of their project to demonstrate what	Major Assessment Project: The unit project asks students to design a library of functions that they can share with classmates. Their library must contain at least two functions and at least one of those functions must include a parameter, return, a loop, and an if-statement.	Major Assessment Project: Students complete the "future school" simulation throughout this unit. Working in teams of roughly five people, students are assigned a role and a set of interests that they'll need to investigate. They research real-world innovations that could improve schools and align	Major Assessment Project: The unit project asks students to complete the Create PT in 12 hours. This is worth 30% of the total score.	Major Assessment Project: Students will complete an end-of-unit assessment that is aligned with CS Principles	Students will receive a final exam score of 1-5, derived from their performance on both the through-course assessment and the end-of-course exam. AP Score 5 - Extremely Well Qualified 4 - Well Qualified 3 - Qualified 2 - Possibly Qualified	

	<p>Assessment Project: The unit project asks students to design a policy position for an imaginary political candidate related to an "Internet Dilemma." Students must analyze news stories about their topic to identify impacted groups, explain those groups' interests, explain technical background about the dilemma, and then recommend a policy solution that the candidate should advocate for.</p>	<p>screens and demonstrate what students have learned about user interface design and event-driven programming.</p>	<p>weeks) Students explore and visualize datasets from a wide variety of topics as they hunt for patterns and try to learn more about the world around them from the data.</p> <p>Major Assessment Project: Students use the data visualizer to find and present a data story. Using what they've learned about the data analysis process, students either choose a dataset inside the data library, or upload one, of their own and create visualizations that find interesting patterns that possibly reveal new insights and knowledge.</p>	<p>they have learned about lists and list processing; otherwise, scoping the project is completely up to them.</p>		<p>with the interests of their character. Throughout the unit, they are given opportunities to refine their proposals as a team and debate the benefits and risks of different computing innovations.</p>		<p>framework objectives covered in this unit.</p>	<p>1 – No Recommendation</p>	
<p>*the topics and assignments in the above courses are subject to change without notice at the discretion of the instructor depending on the availability of time, resources, and adequate facility*</p>										
<p>**school year 10 months - 43 weeks - 301 days** **School Act - school year approximately 193 days with 186 days in session or 37 weeks or 952 hours of instruction for students in grades 8 to 12**</p>										
<p>**semester system 19 weeks - 88 instructional days - 117 hours**</p>										