DSM Academy
Computer Science Courses (2022 Fall)

All courses will be delivered via Zoom. Lecture recording and notes will be available to students.

*<mark>**Early bird discount**</mark>: sign up and pay tuition by <mark>August 21, 2022</mark>.
Course Registration: https://www.DSM-Academy.net/
Contact: DSMAcademy.Shen@gmail.com, js48@txstate.edu

WeChat: jianshentx   **DSM Academy WeChat Group:**

<mark>15 weeks (August 24 – December 10, 2022)</mark>
Meet once per week either on Wednesday or Saturday
No class on Nov. 23 and Nov. 26 (Thanksgiving holiday)

Course/ Instructor	Time	Students	Tuition
Scratch Programming *Dr. Wenbin Luo*	6:00 - 7:15 PM (Central Time) Saturday	Grades 3--9	$300 (regular) Early Bird: $280
C++ Programming *Dr. Ayad Barsoum*	6:00 - 7:15 PM (Central Time) Saturday	Grades 7—12	$300 (regular) Early Bird: $280
Python Programming I *Dr. Chao Gong*	6:00 - 7:15 PM (Central Time) Wednesday	Grades 5--12	$300 (regular) Early Bird: $280
Python Programming II *Dr. Wenbin Luo*	6:00 - 7:15 PM (Central Time) Wednesday	Grades 5--12	$300 (regular) Early Bird: $280
USACO Training *Dr. Wenbin Luo*	7:30 - 8:45 PM (Central Time) Wednesday	Grades 5--12	$300 (regular) Early Bird: $280

CS Course Instructors:
Dr. Wenbin Luo – Professor of Computer Engineering at a private university. He has a Ph.D. in Computer Engineering.

Dr. Chao Gong – IT security consultant. Dr. Gong had been a college CS professor for 15+ years, currently working in the industry as an IT security consultant. He has a Ph.D. in Computer Science.

Dr. Ayad Barsoum --- Associate Professor of Computer Science at a private university. He has a Ph.D. in Computer Engineering.

DSM Computer Science Course Description:

Scratch Programming

Scratch is a block-based visual programming language, designed primarily for young students as an educational tool for coding. This course will teach students the computational thinking skills highly sought-after in our digital world. Students will have the opportunity to learn programming through hands-on projects, such as drawing fractal trees, simulating rocket launching, fireworks & snow simulation, building an analog & digital clock, and message encryption & decryption etc. Students will be able to showcase and share their programming products online with family and friends. Scratch programming is ideal for students 8 to 16 years old.

C++ Programming

C++ is a powerful general-purpose programming language. It can be used to develop operating systems, browsers, games, and mobile apps. C++ supports different ways of programming like procedural, object-oriented, and functional. This makes C++ powerful as well as flexible. C++ is also one of the languages that United States of America Computing Olympiad (USACO) officially supports. In this course students will learn the C++ programming language and enrich their problem-solving skills through hands-on programming challenges. C++ programming is ideal for students 14 to 19 years old.

Python Programming I

Python is one of the most popular programming languages among data scientists and machine learning researchers. It is a perfect language for students to learn fundamental programming skills and concepts. In this course, students will not only build solid programming skills, but also master Python specific features. Topics include, but are not limited to the following: variables, expressions, statements, conditional execution, functions, iteration, and strings. Python programming is ideal for students 11 to 19 years old.

Python Programming II

Python Programming II is for students who have completed *Python Programming I* or have some prior experience in Python. In this course, students will learn more advanced materials in Python. Topics include, but are not limited to the following: advanced string manipulation, reading and writing files, lists, dictionaries, tuples, and regular expressions. In addition, students will learn how to use Python to draw graphics and develop GUI programs. Python programming is ideal for students 11 to 19 years old.

USACO Training

USACO Training is for students who have completed *Python Programming II* or have equivalent experience in Python programming. This course will mainly focus on teaching students competitive programming in Python to prepare them for the coming USACO bronze level contests from December 2022 to March 2023. In addition, students will also learn basic data structures & algorithms concept and implementation in Python. Topics include, but are not limited to the following: algorithm analysis, stacks, queues, deques, linked lists, recursion, searching, and sorting. USACO Training is ideal for students 11 to 19 years old.

Notes:

- ❖ Homework assignments will be given after each class. Students are highly encouraged to try and complete it before the next class, when the instructor will discuss the solution.

- ❖ All lectures will be recorded so that students can watch them later in case they have to miss a class or two, due to family vacation or other unforeseeable events.