

CourseSyllabus

MIDDLE SCHOOL CODING 1A: INTRODUCTION

Do you find yourself wondering how your favorite apps, websites, and games were made? Maybe you want to try building your own. Well, now you can! In Middle School Coding 1a, you will learn all about the technology you use in your day-to-day life as well as explore how the internet functions. Get an introduction to the basics of computer science and discover how to create and build your very own website using HTML and CSS. You'll also become familiar with programming languages like JavaScript and Python Programming. You will leave the course with your very own portfolio of work that will showcase your skills and all that you've created.

Required Materials (Websites Used)

Unit 1

- Logo Interpreter (Login Optional; Free)

<http://www.logointerpreter.com/turtle-editor.php>

Unit 2

- Typing Practice for Programmers (Sign in with Google or Demo; Free)

<https://typing.io/>

- Obvibase (Sign in with Google, Facebook, or email; Free)

<https://www.obvibase.com/>

- Newsela (Required for a lab question; Free)

<https://newsela.com>

Unit 3

- Tynker (Free)

<https://www.tynker.com>

Unit 4

- Lucidchart (Sign in with Google or email; Free)

<https://www.lucidchart.com>

Unit 5

- Replit (Sign in with email; Free)

<https://repl.it/>

Unit 1: Crack the Code!

Learning Objectives:

- Create algorithms to solve word games and puzzles
- Identify the components of a computer system
- Define the term algorithm and explain how it applies to computers
- Distinguish between problems that are better suited for humans to solve than computers and vice versa

UNIT 1 Assignments

Assignment	Type	Score
Unit 1 Text Questions	Homework	10 points
Unit 1 Lab	Homework	10 points
Unit 1 Activity 1	Homework	15 points
Unit 1 Activity 2	Homework	15 points
Unit 1 Discussion Assignment 1	Discussion	5 points
Unit 1 Discussion Assignment 2	Discussion	5 points

Unit 1 Quiz	Quiz	15 points
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Unit 2: There's Nothing "Soft" about Software!

Learning Objectives:

- Define the term "software" and explain how software helps businesses perform tasks
- Understand why file types are necessary and describe the content contained in different file types
- Compare and contrast types of software and recommend the software that's best suited for a task
- Improve keyboarding skills by typing frequently using symbols in code
- Explain the purpose of a database and perform common database operations

UNIT 2 Assignments

Assignment	Type	Score
Unit 2 Text Questions	Homework	10 points
Unit 2 Lab	Homework	10 points
Unit 2 Activity	Homework	15 points
Unit 2 Discussion Assignment 1	Discussion	5 points
Unit 2 Discussion Assignment 2	Discussion	5 points
Unit 2 Quiz	Quiz	15 points

Unit 3: Let's Play!

Learning Objectives:

- Understand how block-based programming can be used to code
- Create simple programs in Tynker
- Define and apply the three main programming constructs—sequence, selection, and iteration
- Learn how to debug a program.

UNIT 3 Assignments

Assignment	Type	Score
Unit 3 Text Questions	Homework	10 points
Unit 3 Lab 1	Homework	10 points
Unit 3 Lab 2	Homework	10 points
Unit 3 Activity 1	Homework	15 points
Unit 3 Activity 2	Homework	15 points
Unit 3 Discussion Assignment 1	Discussion	5 points
Unit 3 Discussion Assignment 2	Discussion	5 points
Unit 3 Quiz	Quiz	15 points

MS Coding 1a Midterm Exam

Learning Objectives:

- Review information acquired and mastered from this course up to this point.

- Take a course exam based on material from the first three units in this course. (Note: You will be able to open this exam only one time.)

MIDTERM Assignments

Assignment	Type	Score
MS Coding 1a Midterm Exam	Exam	50 points
Midterm Discussion Assignment	Discussion	5 points

Unit 4: It's All Greek to Me!

Learning Objectives:

- Describe how and why computers use binary
- Convert between binary and decimal number systems
- List and discuss the four components of programming languages
- Identify and use two common approaches for program design

UNIT 4 Assignments

Assignment	Type	Score
Unit 4 Text Questions	Homework	10 points
Unit 4 Lab	Homework	10 points
Unit 4 Activity	Homework	15 points
Unit 4 Discussion Assignment 1	Discussion	5 points

Unit 4 Discussion Assignment 2	Discussion	5 points
Unit 4 Quiz	Quiz	15 points

Unit 5: Snake Charmer

Learning Objectives:

- Comfortably use an online IDE to write code
- Understand the difference between the Editor and the Interpreter screens
- Use variables containing different data types and correctly type cast
- Receive and process user input
- Write a program that takes user input and applies a mathematical formula to it

UNIT 5 Assignments

Assignment	Type	Score
Unit 5 Text Questions	Homework	10 points
Unit 5 Lab	Homework	10 points
Unit 5 Activity	Homework	15 points
Unit 5 Discussion Assignment 1	Discussion	5 points
Unit 5 Discussion Assignment 2	Discussion	5 points
Unit 5 Quiz	Quiz	15 points

Unit 6: Flexing Our Python Muscles!

Learning Objectives:

- Regulate the flow of a program by using *if* statements
- Understand and use *for* loops to repeat a block of code a specific number of times
- Understand and use *while* loops to repeat a block of code until a condition is satisfied
- Increment a variable to keep count

UNIT 6 Assignments

Assignment	Type	Score
Unit 6 Text Questions	Homework	10 points
Unit 6 Lab	Homework	10 points
Unit 6 Activity	Homework	15 points
Unit 6 Discussion Assignment 1	Discussion	5 points
Unit 6 Discussion Assignment 2	Discussion	5 points
Unit 6 Quiz	Quiz	15 points

MS Coding 1a Final Exam

Learning Objectives:

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from all units in this course. (Note: You will be able to open this exam only one time.)

FINAL Assignments

Assignment	Type	Score
MS Coding 1a Final Exam	Exam	50 points
Class Reflection Discussion Assignment	Discussion	10 points

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