

Khandan Monshi

Department of Engineering, Physical and Computer Science

Programming course

- Programming is **challenging**
- Need to learn the **Theory** before being able to write program
- Covering Theory in class takes **time**, leading to lack of time for **problem solving**



Watch-Think-Write-Share Strategy



Watch videos posted online



Think about questions on the videos



Write key points and create ONE question



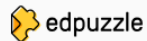
Share in class key points and ONE question

Before
Class

During
Class



Watch Videos Posted on edPuzzle



Content

Gradebook

My Classes



My Classes

• CMSC 140-Fall 2018

CMSC140_Spring 2019

Add new class

CMSC140_Spring 2019

Invite students

Class options

Due Assignments

No Due Date

Students

Assignment

Due date

Turned in



How to Create and Run a C++ Program in Visual Studio 2017

Jan, 24th

0 of 0



What is programming

Jan, 24th

0 of 0



Algorithm using Flowchart and Pseudo code

Jan, 29th

0 of 0



C++ Outputting Tweaks

Jan, 31st

0 of 0



Declaring Variables & Constants

Jan, 31st

0 of 0

Crop Video, Add Audio, Add quizzes



Functions - Multiple Parameters

Saved a day ago

Save

Finish

Crop Video

Voiceover

Audio Notes

Quizzes

```
*main.cpp x
1  #include <iostream>
2  using namespace std;
3
4  int addNumbers(int x, int y){
5      int answer = x + y;
6      return answer;
7  }
8
9  int main()
10 {
11     return ;
12 }
13
14
15
16
17
18
19
```



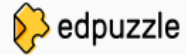
YouTube



Why crop a video?

Save yourself and your students' time - crop a video down to just the important stuff.

Add Different types of Questions



Functions - Multiple Parameters

Saved in 5 minutes

Save

Finish

Crop Video

Voiceover

Audio Notes

Quizzes

```
*main.cpp x
1  #include <iostream>
2  using namespace std;
3
4  int addNumbers(int x, int y){
5      int answer = x + y;
6      return answer;
7  }
8
9  int main()
10 {
11     return 0;
12 }
13
14
15
16
17
18
```



1 of 1 +

B*I*U x^2 x_2 *f_x*

Type your open ended question here



Discard changes

Save

Add Different types of Questions



Functions - Multiple Parameters

Saved a few seconds ago

Save

Finish

Crop Video

Voiceover

Audio Notes

Quizzes

```
main.cpp x
1 #include <iostream>
2 using namespace std;
3
4 int addNumbers(int x, int y, int a, int b){
5     int answer = x + y + a + b;
6     return answer;
7 }
8
9 int main()
10 {
11     cout << addNumbers(43, 86, 32, 43);
12     return 0;
13 }
14
15
16
17
18
19
20
```



You cannot answer while creating a lesson

What will the following code display?

```
#include <iostream>
using namespace std;

int getValue(int);

int main()
{
    int x = 2;
    cout << getValue(x) << endl;
    return 0;
}

int getValue(int num)
{
    return num + 5;
}
```

 2

incorrect

 getValue(x)

incorrect

 7

correct

Students Progress

	0/100	Sep, 3rd	On time	...
	0/100	Aug, 29th	Not turned in	...
	0/100	Sep, 6th	Not turned in	...
	0/100	Never	Not turned in	...
	90/100	Sep, 17th	Not turned in	...
	90/100	Aug, 29th	On time	...
	90/100	Aug, 30th	On time	...
	99/100	Aug, 28th	On time	...
	99/100	Aug, 28th	On time	...
	100/100	Aug, 30th	Not turned in	...
	100/100	Sep, 6th	On time	...
	100/100	Aug, 30th	On time	...

Gradebook

Total score out of 100	Total time spent	Print Out Multidim... Nov, 27th	Multidimensional A... Nov, 27th	Passing Arrays to ... Nov, 20th	Using Arrays in Cal... Nov, 15th	Create an Arrey Us... Nov, 13th	Intro to Arrays Nov, 13th	Local and Global V... Nov, 8th	Creating Function... Nov, 8th	Functions Returni... Nov, 8th	Functions - Passin... Nov, 6th	functions with pat... Nov, 1st	Intro to functions Oct, 30th	Writing to Files Oct, 26th	Reading and Writin... Oct, 26th	Nested Loops Oct, 25th	For Loop -Stoc... Oct, 23rd
55	2 h	...	...	...	67	100 ^L	67 ^L	...	...	...	0 ^L	0 ^L	...	...	...	...	...
57	3 h	...	...	...	67 ^L	33 ^L	67 ^L	...	...	...	100 ^L	100	...	...	...	0 ^L	...
88	2 h	...	...	...	100	67 ^L	100	...	...	...	100	100 ^L	...	...	...	...	...
81	3 h	...	...	...	67 ^L	100 ^L	100 ^L	...	...	...	0	100 ^L	...	...	...	...	...
93	3 h	...	...	...	100	100 ^L	100	...	...	...	100 ^L	50	...	...	...	...	...

Think about Questions on the Videos



Math Operators in C++

* MULTIPLICATION

- Operator: *
- Example:
 - `cout<<5*2*3<<endl;`
 - Will Output:
 - 30

The dimensions (width and length) of room1 have been read into two variables: width1 and length1. The dimensions of room2 have been read into two other variables: width2 and length2. Write a single expression whose value is the total area of the two rooms.

Submit Skip Rewatch

02:02 05:50

A screenshot of a YouTube video player. The video content shows a slide titled "Math Operators in C++" with a sub-heading "* MULTIPLICATION". The slide lists the operator "*" and an example: "Example: cout<<5*2*3<<endl;" and "Will Output: 30". To the right of the video player, there is a text box with a question: "The dimensions (width and length) of room1 have been read into two variables: width1 and length1. The dimensions of room2 have been read into two other variables: width2 and length2. Write a single expression whose value is the total area of the two rooms." Below the text box are three buttons: "Submit", "Skip", and "Rewatch". The video player interface includes a progress bar, a play button, and a "YouTube" logo.

Write Key Points and Create ONE Question



Students upload
Questions and
the Answer on
blackboard

Share in Class Key Points and ONE Question



Typical Class Activities

- Short 5 min Quiz
- Worksheet
 - Short Answer Questions
 - Programming Questions

Students' Survey

Watched Videos on Time	Confident to answer Questions on the Video	Effectiveness of Videos in class discussions?
90%	75%	80%

Students' Survey

- I think that we should be given the answers to the programming questions videos, that would help students understand their mistakes.
- if they were shorter and more of them
- The questions were difficult to understand and you only had one try for them.
- They shouldn't be grades because if the students don't understand the material it is helpful if the teacher still spends time instructing

Comparing Midterm Exam Results

Class	# of Students	Average Grade	Max	Min
Fall 2018	25	<u>83</u>	96	55
Spring 2018	22	<u>74</u>	97	46
Fall 2017	25	<u>75</u>	96	31

Comparing the Final Exam results

Class	# of Students	Average Grade	Max	Min
Fall 2018	24	<u>78</u>	93	35
Spring 2018	22	<u>53</u>	92	15
Fall 2017	25	<u>55</u>	96	31

Comparing Midterm and Final Grades

