

Welcome to
PIC 10 A

Instructor

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Lyu Liyao (吕力遥)

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Lecture: Monday & Wednesday & Friday 2pm-2:50pm

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Office: MS 7370

Office Hour: Monday 1pm-2pm & Wednesday 1pm-2pm (or by appointment)

Teaching Assistant

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James Chen

Email: jamesdc1[at].ucla.edu

Student Hour: See [BruinLearn](#) module

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Email: jamesdc1[at].ucla.edu

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Jack Moffatt

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Discussion Section

2pm-2:50pm Tuesday, Thursday

Course Description

- No prior programming experience assumed.
- Basic principles of programming, using C++.
- Algorithmic, procedural problem solving.
- Program design and development.
- Basic data types, control structures and functions.
- Functional arrays and pointers.
- Introduction to classes for programmer-defined data types.

Course Website

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- Announcements will be posted on BruinLearn.

Textbook

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- A draft textbook available on BruinLearn written by PIC Director Michael Andrews.

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- Recommended reference book:
"Big C++: Late Objects, 3rd Edition" by Cay S. Horstmann.
"C++ Primer (5th Edition)" by Stanley B. Lippman, Josée Lajoie, and Barbara E. Moo.

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- All homework will be graded using an autograding system. You will receive immediate feedback and your final score once you submit. You may resubmit your homework an unlimited number of times before the deadline without penalty.
- **Recommendation:** Do not wait until the last minute to submit, in order to leave yourself time to correct mistakes and avoid technical issues.

The official compiler for PIC 10A is the one used by Gradescope (`g++ -std=c++14`). If you use a Windows computer, install Microsoft Visual Studio Community 2022. If you use a Mac, install XCode. In either case, always check that your work is compiled correctly on Gradescope by submitting your work and reading the comments produced by the autograder. If your code runs on XCode or Visual Studio but not on Gradescope, then you will score 0 points.

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Final Exam

- There will be a **cumulative final exam**, scheduled by the university for **Thursday, December 12, 3:00pm-6:00pm**
- Note that university policy requires that a student who has an undocumented absence from the final exam be given a failing grade in the course.

Grading

Your course score will be determined by the scheme which gives you the highest score.

Scheme	Homework	Midterm 1	Midterm 2	Final
M1 && M2	15%	25%	25%	35%
!M1 && M2	15%	0%	25%	60%
M1 && !M2	15%	25%	0%	60%
!M1 && !M2	15%	0%	0%	85%

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- You are encouraged to discuss homework problems with your classmates, but you must write up your solutions on your own.
- You may not copy code from another student, from the internet, or from any other source.
- you are not permitted to use AI-based technology (like ChatGPT and Copilot) to write code.

Our Inclusive Learning Environment

UCLA values diversity and inclusion. We expect everyone in this class to contribute to a respectful, welcoming, and inclusive environment to support the learning of all other members of the class. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, please notify us.

Support Services

- Students needing academic accommodations based on a disability should contact the Center for Accessible Education (CAE). CAE will assess all requested accommodations and communicate appropriately with us (your instructors). For more information, please visit the [CAE website](#).

Support Services

- Resources are available to foster the well-being of all UCLA students as they pursue their academic goals. Any student who finds themselves in immediate distress, please call Counseling and Psychological Services (CAPS) to speak directly with a counselor 24/7, or please call 911. For more information, please visit the [CAPS website](#).

Support Services

- You deserve a learning environment free from discrimination, sexual harassment, sexual assault, domestic violence, dating violence, and stalking. If you experience these behaviors or otherwise know of a Title IX violation, you have many options for support and/or reporting. The UCLA Title IX Office can help you navigate your options. For more information, please visit the [Title IX Office website](#).

Questions?

Feel free to ask me or the TAs after class, during office hours, or by email!

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```
1 int main() {  
2     return 0;  
3 }
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- Every C++ program must have exactly one main function.
- Execution begins with main.
- Semicolons (;) mark the end of statements.
- Returning 0 means: “Program finished successfully.”

Hello World!

```
1 #include <iostream>
2 int main() {
3     std::cout << "Hello, World!\n";
4     return 0;
5 }
```

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- `#include <iostream>` is a header file library that lets us work with input and output objects, such as `"std::cout"`.
- `std::cout` is the standard output stream object in C++.
- The `<<` operator is used to send data to the output stream.
- `"Hello, World!\n"` is a string literal that will be printed to the console, followed by a newline character (`\n`).

Hello World! Again

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     cout << "Hello, World!" << endl;
5     return 0;
6 }
```

Hello World! Again

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     cout << "Hello, World!" << endl;
5     return 0;
6 }
```

- using namespace std; allows us to use names from the standard library without the "std::" prefix.
- endl is an output manipulator that inserts a newline character and flushes the output buffer.

Backslash Escape Sequences

- `\n` - Newline
- `\t` - Tab
- `\\` - Backslash
- `\"` - Double Quote

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     cout << "Hello, \nWorld!\n";
5     cout << "This is a tab:\tSee?\n";
6     cout << "She said, \"Hello!\"\n";
7     cout << "This is a backslash: \\n";
8     return 0;
9 }
```


Exercise

What will the following code print?

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     cout << "Hello, \\nWorld!\\n";
5     return 0;
6     cout << "Hello, World!\\n";
7 }
```