

PIC 10A SECTION 1, JAN - MAR, 2020

INSTRUCTOR: Michael Lindstrom (Mike)

OFFICE HOURS: Mon 10:30-11:20 (PIC Lab)
Fri 14:30-15:20 (Joint with PIC 40A) (PIC Lab)

CONTACT INFO: e: M I K E L [at] math [dot] ucla [dot] edu, p: 310-825-3049
Office: MS 5622

LECTURE TIME/LOCATION: M/W/F 9:00-9:50 in MS 5200

SECTION WEBSITE: www.math.ucla.edu/~mikel/teaching/pic10a
CCLE: https://ccle.ucla.edu/
- for course notes and CCLE discussion forums

UPDATES: Check your email and embedded twitter feed ([@mikel_ucla_math](https://twitter.com/mikel_ucla_math))

PREREQUISITES: None – but an interest in programming would help 😊

TAS: Sam Amin
Alex Dobner

TUTORIALS: 1A: T/R 9-9:50 in MS 5203 (Alex)
1B: T/R 8-8:50 in MS 5203 (Alex)
1C: T/R 8-8:50 in MS 5127 (Sam)

CONTACT INFO: e:
A D O B N E R [at] U C L A [dot] E D U (Alex)
S A M A M I N [at] U C L A [dot] E D U (Sam)

TA OFFICE HOURS: PIC Lab: 11:30-13:20 Mon + 10:00-10:50 Thurs (Alex)
PIC Lab: 13:00-13:45 Tues + 14:00-14:45 Thurs (Sam)

COURSE FORMAT AND BACKGROUND:

This is an introductory[#] programming course. No prior programming experience is expected. The emphasis of the course will not only be practical coding, but also the conceptual knowledge of the C++ language and programming in general. Much of your learning will take place in doing the assignments.

#: introductory does not mean easy! You will have to work hard if you want to get a good grade.

NOTES/LECTURE/DISCUSSION: Unless otherwise specified, you are responsible for everything covered in the notes, in addition to any material that comes up in lectures or discussion that might not be in the notes.

The course notes/slides effectively serve as a textbook and many important details are written up within the notes. Consider the notes to be a reading assignment.

The lectures will generally follow the notes in content but may deviate from them to do more demonstrations or discuss a topic at a higher level: you are still responsible for what is in the notes!

The discussions are there to reinforce concepts, go more in-depth into examples, and provide homework guidance.

The lectures and discussions will both include participation problems and exercises.

SUPPORT: You are highly encouraged to form study groups, share notes, collaborate, etc. But you must do your own work and typing.

There are CCLE discussion forums where you can post questions, share ideas, and receive hints from your instructor and TAs.

The purpose of office hours is primarily to discuss/clarify course concepts and for homework-related hints on how to approach a problem. Office hours are not designed as a time for the homework to be done or debugged for you (you will not learn anything that way).

GRADING SCHEME:

Grading is performance based and not based on a curve. In particular, there is no limit to the number of A's that can be assigned! Regardless of your academic background, if you demonstrate mastery of the material, you can get an A!

Your course percentage is computed based on (**revision due to coronavirus**):

~~Final Exam – 55%~~
~~Homework** – 25%~~
~~Participation – 10%~~
~~max(Midterm, Final Exam) – 10%~~

- max(Midterm, Final Exam) – 65%
- Homework** – 25%
- Participation – 10%

** out of 9 homework assignments given all quarter, the lowest 2 will be dropped from your score: this applies to everyone.

Precise cutoffs for letter grades are to be determined after the final exam; however, the general meaning of an A level grade (A-, A, or A+) is: outstanding work; proficiency in all of the course material; solid commitment to the course has been exhibited. Perfection is not required, but students of this category demonstrate determination and strong study skills, even when faced with setbacks or hard exams/assignments. Such students tend to do every assignment, regardless of its apparent difficulty, whether or not they have already earned full homework marks, and fully participate in all aspects of the course. Students at the upper-end of this category have a deep understanding of even the most challenging course topics, appear to have an intrinsic motivation to learn the material, and often think

about the material at a deeper level than the course requires. These students are comfortable enough with the course content and have a sufficient enough mastery of topics that they can apply their skills to new problems on exams. Many students here ask a lot of questions and make use of office hours, discussion sections, and other support. All students who earn A-, A, or A+ grades demonstrate proficiency in the material on exams, but an A or A+ is only given to students demonstrating mastery of the material.

In setting the final grades: you will be anonymized (names blocked out) and ranked based on your overall course percentage with various data such as overall course percentage, final exam grade, overall homework grade, etc., visible. Grade brackets are chosen to group qualitatively similar collections of students and a drop in one or more grade brackets is chosen when there is justifiably a gap/difference, based on the data, between two successive students such as, but not limited to, a large gap in overall percentages or a noticeable drop in exam performance, etc. Historical grade distributions are also considered in this process if any grade brackets are otherwise ambiguous. See figure.

It is very likely that an overall percentage below 50% will be an F. This does not imply that scoring above 50% will automatically yield a passing grade!

23	19, 17, 14, 0	12, 12, 11, 11, 0, 0
33	15, 14, 9, 15	12, 11, 9, 0, 11, 0

20	20, 12, 0, 0	12, 12, 11, 0, 0, 12
46	18, 17, 0, 0	12, 11, 11, 5, 6, 8
24	23, 10, 11, 0	12, 12, 9, 10, 12, 0

Overall course percentages are redacted (greyed regions). Row-by-row, the overall course percentages are arranged in decreasing order.

---'s indicate a grade bracket cutoff: note that any student above a cutoff had a higher overall course percentage (greyed) than the student below. Generally, the letter grade cutoffs are determined by (i) a large percentage gap in overall course percentage or final exam grade (first visible column), or (ii) historical grade data.

Participation: In lectures, you will be asked participation questions that you will submit via a simple web form at www.math.ucla.edu/~mikel/teaching/pic10a/participation . In discussions, you will be given participation questions that you will submit in writing.

Scoring: each answer submitted is worth 1 point. Full marks are earned for earning 80% of all points, i.e., if you respond to 85% of all questions (whether or not you are correct), you will earn 85/80 → 100% here. On the other hand, if you only respond to 60% of questions then you will earn 60/80 = 75%. This is really about participation and engaging in the material, and not a serious form of assessment!

If having access to the internet during lecture is a problem, consider allowing a neighbour with internet access to submit your answer.

Course Evaluation Participation: Once grade bracket boundaries have been assigned, those who participated in the course evaluations (instructor and TA) and who are within 0.5% or less of the next grade bracket will be brought into that higher grade bracket. No bumps will be given in any other circumstances.

Midterm: You will be given one 50-minute midterm in class on Friday, February 14.

Homework: There will be 9 homework assignments to submit on CCLE. You should only submit the raw .cpp or .h files, and they must be named appropriately.

Late submissions will not be accepted. The assignments will be posted on CCLE. The assignments are important for your learning!

Visual Studio 2019 is available for download here as Visual Studio 2019 Community (<https://www.visualstudio.com/downloads/>) and provided in the PIC Lab.

Visual Studio 2019 is the course standard for homework submissions and all course work; this course does not directly support Mac's Xcode or other compilation environments.

Homeworks will be graded according to Visual Studio 2019 alone. If your code does not compile or operate correctly on Visual Studio 2019, marks will be deducted as though it does not compile or operate correctly, regardless of whether it works on other software or compilers!

As a best practice, before you submit your homework files, you should check that they work correctly on the Visual Studio 2019 environment supplied in the PIC Lab.

Homeworks will be scored out of 20 points as below (refer to the **HW_Codes** document for a list of required coding practices and techniques that are required for homework):

Output (8 points): the code output should perfectly match the description given in the homework and follow all specifications.

- 0 ← does not compile *or* the output is far from the desired output *or* the code violates important homework specifications
- 4 ← some progress has been made but the output is far from being correct (e.g. the display format is correct but the output is mostly wrong, the initial output is good but the program soon crashes, etc.)
- 6 ← the output is mostly correct, not a complete match to the desired output (e.g. the program runs but logical errors result in the odd incorrect readout, etc.), no crashes
- 8 ← the output is a perfect match to the desired output.

Other score values are not possible.

Let $M = \min(12, 2 \times \text{Output})$ if $\text{Output} > 0$;

6 if $\text{Output} = 0$ but the submitted code is mostly complete;

0 otherwise.

Code readability and good coding practices (12 marks): code documentation/commenting, choice of variable names, layout; robustness, efficiency, etc.

Let $X = \#$ guidelines that were not met

Readability and Good Practice Score = $\max(M - X, 0)$

Note: if your code does not compile, you can earn at most 30% on a homework. The test cases used are very similar to those given in the sample code. If your code does not compile, it is a sign you never had it working to begin with or never bothered to test your work! Even if your code does compile, if you do not have good coding style, you may only earn 40%. But functionality *combined with* style can earn you 100% 😊

All homework grading queries must be brought up with your TA. Do not email your instructor about the homeworks.

Final Examination: There will be a final exam covering all the material from the course taking place on Friday, March 20, 15:00-18:00. Location TBD.

FORMAL POLICIES:

Waitlists and PTEs: All students on the waitlist will be admitted to the course when the waitlist period ends. No PTEs will be given out.

Missing Work: If the final exam is missed for a valid reason and your overall course percentage computed by excluding the final exam is above 75%, you will be given an Incomplete to complete your course work at a later date. University policy states that you cannot pass the course unless you take the final exam.

Valid reasons include one of the following: (a) prior notice of a valid, documented absence (e.g. out-of-town varsity athletic commitment), (b) notification to the instructor within one week due to a medical condition or (c) an emergency. All reasons require written documentation, for example a doctor's or counselor's note stating the student was medically/psychologically unfit to be in school, a copy of a death certificate, or a letter from a coach. A score of zero will otherwise be assigned.

Missing the midterm for any reason will automatically transfer its weight to the final exam; there will be no makeup midterms.

Because two homework assignments will be dropped and only 80% of participation points are required to earn 100%, no homework grades or participation scores will be excused, even for a valid, documented absence, even for students who register late. The purpose of dropping the assignments and participation points is not leniency; the purpose is to account for unforeseen circumstances such as sickness, needing to travel, medical appointments, joining late, and the likes.

Collaboration Policy: You must identify all collaborators on your assignments and you must do your own typing! Copying someone else's code (copy-and-pasting or otherwise) is strictly prohibited!

At the top of every assignment, you should declare the following:

I, [YOUR NAME], declare that this work is my own. I did this work honestly and can fully stand behind everything that I am submitting.

None of the code submitted is copied from another person's work.

And, if a collaboration took place, also add:

I collaborated with [NAMES OF COLLABORATORS] and I affirm that we all contributed equally in the code. What I submit has not been copied from these collaborators.

Under no circumstances does the above declaration entitle you to copy the work of other students! You should also not allow your work to be copied by others as that will only hurt them on exams (and if you are caught, all parties involved may be subject to disciplinary action).

Students with Disabilities: If you have a documented disability, please contact the Center for Accessible Education and have them consult with your instructor to ensure you are accommodated.

It is your responsibility to do this in a timely manner. Special exam accommodations will not be provided by the instructor or TAs.

Regrades on the Midterm: The midterm will be returned at the discussion section. You will then have until the end of that discussion section to request a regrading. To request a regrading:

- (i) you must write a note on a separate piece of paper from your exam, outlining why you are requesting a regrading;
- (ii) you may not write anything extra on your exam;
- (iii) and you must submit your regrading request to your TA by the end of the discussion section in which the test is returned. Once you leave the discussion room with your exam, the grade is final.

Work will not be regraded if items (i)-(iii) are not all satisfied.

If you miss the discussion section, you must collect your test from the instructor's office hours within 5 business days of the original return date and then the same policies apply: once you leave the office with your test, the grade is final.

With a regrading, your work in its entirety will be regraded by the instructor, not just the (single) question(s) you are asking about: your mark could stay the same, go up, or go down.

As a point of reference in regrade requests, the statistics are approximately: 10-20% of the time a mark goes up, 30-40% of the time a mark stays the same, and 40-50% of the time a mark goes down.

If you catch an addition error, you still must return your work according to the policies listed above, but none of your test will be regraded – the total will simply be checked and corrected if necessary.

All exam marks are final after a regrade.

Regrades on the Homework: To request a homework regrading, you must submit a request to your TA within 5 business days of the homework grade release date (or before the date of the final exam in the case of the final assignment).

Your TA will be in-charge of the homework regrades and your mark could stay the same, go up, or go down.

Some students request regrades for unjustified reasons, claiming that their homework compiles in the proper Visual Studio 2019 environment (let's be clear, Xcode is irrelevant for testing the homework!) when in fact it does not. False claims waste TA time and resources. To prevent this behaviour, the following policy applies: *after the first false compilation claim*, TAs will assign a grade of zero on a homework regrade (regardless of style points) if the homework does not even compile on the sample/test cases/code supplied in the homework.

All homework marks are final after a regrade.

Cheating: If a student is suspected of cheating (on a test, assignment, etc.), the department will be notified immediately and severe academic disciplinary action may follow. This could include expulsion from the university!

Examples of cheating include:

- getting someone else (classmate, friend, tutor, online freelancer, etc.) to do one's homework/projects,
- copying from a past student's work,
- accessing prohibited materials on an exam,
- modifying a homework after its submission deadline,
- starting a test before the designated time or continuing to write when time is up,
- intentionally looking at another student's exam and copying or intentionally exposing your own exam to a student,
- copying another student's homework verbatim (even if you change the variable names and reorder a few things, that's plagiarizing!),
- taking work from websites and presenting it as your own,
- adjusting your answers to an exam after it has been graded and requesting a regrade, or
- not attending class/discussion and getting a classmate to respond to the participation problems on your behalf.

Emails and Course Forums: Homework-specific or conceptual questions should be posted on the online discussions at CCLE.

Generally emails will not receive a response.

It is best to speak in person about personal course concerns and to post on CCLE for other questions.

Emails about anything that is answered in the syllabus, in class, or in course announcements will not receive a reply. Also note that some email clients seem to block email replies given from math.ucla.edu: yahoo is particularly bad for this.

Instructor Discretion: The final course marks may be shifted and scaled, and the instructor reserves the right to revise any mark. This syllabus is also subject to change.

GENERAL:

Discussion sections: The discussions are extremely important! The lectures serve to introduce topics, ideas, and build motivation; in the discussions, you will get vital practice and review.

Lateness and Talking: If you do arrive late, please enter with your notebook/laptop, pen, etc. ready and be as quiet as possible to avoid interrupting others.

Unless there is an in-class problem you have been assigned to work on (in which case you are encouraged to talk!), you should not be talking during the lecture. It is disruptive and rude to both your instructor and your fellow classmates; talking will not be tolerated.

Electronic Devices and Distractions: Please turn off the noise on any cell phones, etc. If you may be tempted to use your laptop for non-class activities, be considerate of your classmates and sit towards the back to avoid distracting others.

Participation: You are encouraged to get involved in the material, to answer questions in class and on the forums, and to ask questions when you're unclear of what's going on. Don't be afraid to ask questions! To better engage with classroom discussion, please try to sit next to at least one classmate to discuss in-class problems.

Succeeding: There is no rule that anyone has to fail! There is absolutely no reason you cannot excel in this course if you work for it!

SUCCESS TIPS:

- Attend class. Hearing information live, doing problems, and being able to ask your own questions is important and correlates strongly with exam performance.
- Attend your discussion sections. Lecture time is very limited: there is reason why 2 hours per week are scheduled for this course outside of lectures.
- Do not get behind: once there is a topic you are weak with, it could very well prevent your understanding subsequent topics. The material does build.
- Beware the "familiarity fallacy": just because you've seen a topic before, doesn't mean that you have mastered it.
- Make use of office hours and CLE discussions.
- Don't be afraid to speak with your instructor or TA: you are not just a number!