

## Fall 2022 Syllabus

The University of Iowa  
The College of Liberal Arts and Sciences  
[Department of Mathematics](#)  
14 Mac Lean Hall

### MATH:1020:0631 Elementary Functions

Lectures: Tuesdays and Thursdays 6:30PM – 8:20PM in 113 MacLean Hall (MLH)

**Course ICON site:** To access the course site, log into [Iowa Courses Online \(ICON\)](#) <https://icon.uiowa.edu/index.shtml> using your Hawk ID and password.

#### Course Home

The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, the “second-grade only” option (SGO), academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies.

**Instructor:** Miguel Barquinero

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Office hour: Tuesdays 5PM - 6PM and by appointment.

Math Lab hours: Wednesdays 6PM - 8PM

**Course Supervisor:** Dr. Olga Sokratova

Office location: 225 K MLH

Drop-in hours: MWF 11:30-12:20

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**DEO Contact Information:** DEO Contact Information: Prof. Weimin Han, 14 MLH, email: [weimin-han@uiowa.edu](mailto:weimin-han@uiowa.edu)

**Approved GE:** Quantitative or Formal Reasoning.

**Prerequisites:** MATH:1010 with a minimum grade of C- or MATH:1005 with a minimum grade of C- or MPT Level 3 score of 9 or higher or ALEKS score of 60 or higher or MATH:1340 with a minimum grade of C-.

**Recommendations:** it is strongly recommended that students whose math placement score is older than one year retake the math placement test for accurate placement and success in the course.

**Catalog Description of Course:** This is a fast paced one-semester college precalculus course. This course is roughly equivalent to MATH:1005 College Algebra and MATH:1010 Trigonometry

compressed into one semester. Topics include functions, coordinate systems; properties and graphs of algebraic, trigonometric, logarithmic, exponential functions; inverse trigonometric functions; and properties of lines, circles, and other conics. *This course is not intended for those learning graphing, logarithms, exponentials, or trigonometry for the first time.* After successfully completing this course students are fully prepared for the trigonometry-based calculus courses MATH:1850, MATH:1460, or MATH:1550.

**Goals and objectives:** The main goal of this course is to prepare students for a trigonometry-based calculus course (MATH:1850, MATH:1460, or MATH:1550). The particular objectives are using functional notation, finding the domain of polynomial, rational, radical, exponential, and logarithmic functions, evaluating the sum, difference, product, quotient, and composition of two functions at a given value, finding the inverse of a function and its domain and range, interpret the graphs of functions, sketching the graphs linear, polynomial, rational, exponential, logarithmic functions and their transformations as well as piece-wise defined functions, solve polynomial and rational inequalities, using the factor and remainder theorems using polynomial long division to factor polynomials of degree three and higher, finding the vertex of a parabola by completing the square and using the vertex formula, finding the center and radius of a circle by completing the square, solving polynomial, rational, exponential (with like and unlike bases), logarithmic equations as well as equations involving radicals and rational exponent, using applications of linear functions, quadratic functions (including falling object problems and extremum problems), exponential and logarithmic functions (including exponential growth and decay, doubling time, and half-life problems). Finding the trigonometric function of any angle, proving trigonometric identities using definitions, solving trigonometric equations using identities, solving right, acute and obtuse triangles, solving problems using the law of sines and the law of cosines, graphing trigonometric functions and their inverses, and describing their behavior, including periodicity and amplitude; using polar coordinates and graphing polar curves, representing complex numbers in rectangular and polar form, and convert between rectangular and polar form, multiplying complex numbers in polar form and using DeMoivre's theorem to find roots of complex numbers, defining a curve parametrically and graphing parametric curves, writing equations of conic sections in standard form.

### Required Texts

The ICON Direct program will be used to provide required course materials via your ICON course site. Your U-Bill will be charged automatically by the Iowa Hawk Shop after your course has started, unless you opt out prior to the last day for tuition and fee reduction [course deadline](#).

1. ALEKS Access. ALEKS is an online, adaptive learning system that will provide problems and assessments for you to work on throughout the semester. You will be billed for one semester of access to ALEKS through the ICON Direct program.
2. Course Workbook. The workbook is available for you on ICON. **It is strongly recommended that you come to class with a printed copy of that day worksheet or that you work with an electronic copy.**

**Tentative lecture schedule:** (subject to change)

	<b>Starting</b>	<b>Tuesday Hour 1</b>	<b>Tuesday Hour 2</b>	<b>Thursday Hour 1</b>	<b>Thursday Hour 2</b>
Module 1	Aug 22	Introduction; 0.1	0.2,	0.3, 04	Practice
Module 2	Aug 29	0.5	0.6	1.1, 1.2, 1.3	Practice
Module 3	Sept 5	<i>Labor Day</i>	1.4, 1.5	1.6	Practice
Module 4	Sept 12	1.7	1.8	Review	<b>Exam</b>
Module 5	Sept 19	2.1, 2.2	2.3, 2.4	2.5, 2.6	Practice
Module 6	Sept 26	2.7	2.8	2.9	Practice
Module 7	Oct 3	3.1	3.2, 3.3	3.4, 3.5	Practice
Module 8	Oct 10	3.6	3.7	Review	<b>Exam</b>
Module 9	Oct 17	4.1	4.2, 4.3	4.4, 4.5	Practice
Module 10	Oct 24	5.1, 5.2	5.3	5.4	Practice
Module 11	Oct 31	5.4	5.5	5.6	Practice
Module 12	Nov 7	6.1, 6.2	6.3, 6.4	6.5	Practice
Module 13	Nov 14	7.1	7.2, 7.3	Review	<b>Exam</b>
-----	Nov 21	<i>Thanksgiving Break</i>			
Module 14	Nov 28	7.4	7.5	7.6	Practice
Module 15	Dec 5	7.7	8.1	Review	Review

**Course Format**

Typically, we'll have three ``regular classroom'' days and one ``computer lab''/practice day.

On the regular classroom days, you will spend most of the time listening to the lecture and working on worksheets from the course workbook. Spending time in class actively working on problems – instead of taking notes from a lecture – will help you learn the course material better. It may very well make learning the material more fun too. It is important that you come to class each day prepared and ready to participate.

On the computer lab days, you will spend the class time working on ALEKS modules. You will also receive some short periods of instruction from your instructor on ALEKS modules that may be more challenging than others. Please bring a laptop or tablet on Thursdays.

**Tech Support:**

ALEKS Support: <https://mhedu.force.com/aleks/s/alekscontactsupport>

Go to [ICON Help for more information on finding help with ICON.](#)

[University of Iowa Help Desk: 319-384-HELP \(4357\), phone; its-helpdesk@uiowa.edu](#)

**Grading procedures:** The final grade will be based on participation, group projects, weekly progress, quizzes, midterm tests, final pie chart, and final examination as follows:

Participation	5%
Quizzes	15%
Aleks Weekly Progress	20%

Midterm Exam I	10%
Midterm Exam II	10%
Midterm Exam III	10%
Final Pie Chart	5%
Final Exam	25%

Grades will be assigned on a curve, which will be determined after the final examination. The grades will not be lower than the following:

93- 100%	90- 92.9%	87- 89.9%	83- 86.9%	80- 82.9%	77- 79.9%	73- 76.9%	70- 72.9%	67- 69.9%	63- 66.9%	60- 62.9%	less than 60%
A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

Note that no A+ will be given in this course.

**Participation:** You are allowed to have one (1) unexcused absence without a penalty; each subsequent unexcused absence will lower your overall grade by one (1) percentage point (E.g., if you miss 3 classes, your participation grade would be 3%. If you miss 6 or more classes, your participation grade would be 0%). *If you have an excused absence, you may make up for a missed class by completing the corresponding section in the workbook and emailing your work to the instructor.*

**ALEKS Weekly Progress:** Even though there is a certain degree of self-pacing you must make steady progress in the course. This will be monitored by the instructor in ALEKS. There will be a set of topics ("module") given for each week. Each weekly module is due on Sunday by 11:59 pm (or Friday by 11:59 pm on exam weeks).

**Quizzes:** You will have to complete a quiz weekly on Mondays starting in the second week of classes. The quizzes will be based on problems from the past module and are completed on ALEKS. You will take these quizzes online outside of class. The quizzes will be timed, and you will be expected to show your work and upload this to ICON. The two lowest quiz scores will be dropped at the end of the semester.

**Practice Quizzes and Exams:** You will be given practice quizzes and exams prior to regular quizzes and exams. These are optional but highly recommended. 5% of your practice quiz/exam score will be added to your corresponding quiz/exam score. Note that your quiz or exam score will not exceed 100%.

#### **Examinations:**

There will be three in class midterm exams and a cumulative final exam.

**Midterm 1:** Friday, September 16, in class. Coverage: Module 1-4.

**Midterm 2:** Friday, October 14, in class. Coverage: Modules 5-8.

**Midterm 3:** Friday, November 18, open in class. Coverage: Modules 9-13.

**Alternate Midterm Exams:** If a student fails a midterm exam (the exact passing score will be determined after each midterm), he or she will be given an opportunity to take an alternate exam. The highest possible grade for an alternate exam is C.

**Final Exam:**

Date: TBA

Coverage: comprehensive

Classroom: TBA

**Date and Time of the Final Exam**

The final examination date and time will be announced by the Registrar generally by the fifth week of classes and it will be announced on the course ICON site once it is known. The final examination period, which is December 12-16, 2022. **Do not plan your end of the semester travel plans until the final exam schedule is made public. It is your responsibility to know the date, time, and place of the final exam.** According to Registrar's final exam policy, students **have a maximum of two weeks after the announced final exam schedule** to request a change if an exam conflict exists or if a student has more than two exams in one day (see the [policy](#) here).

**ALEKS**

When you first log on to ALEKS, you will be given a brief tutorial explaining how to use ALEKS answer input tools. After that you will complete the initial knowledge check, which will determine what you already know and what you need to learn. It is very important that you complete the initial knowledge check on your own. After that you will work on your pie chart topics in the learning mode. Each week you will work on topics from the current module. If you finish the module before the deadline, all other topics will be open, and you may work on any topic from a past or a future module.

To ensure that topics learned are retained in long term memory, ALEKS periodically reassesses students, using the results to adjust your pie chart. Take this weekly assessment seriously, do not skip questions, otherwise you will have to redo all your topics again. It is normal to lose 1-5 topics after each assessment. If you routinely lose more, talk to your instructor. The best time to make up for the lost topics is before the deadline of the module.

*It is important that you start working on a new ALEKS module as soon as possible. Do not wait until the deadline. You may work ahead of time.*

**College of Liberal Arts and Sciences (CLAS) Course Policies**

**[Attendance and Absences](#)**

Attendance will be taken regularly. Absences will only be excused for medical or family emergency reasons, a university-sanctioned field trip or the observance of a religious holiday. If

you miss a class due to illness, you should submit the absence form through the Registrar website.

### *Make-up options for quizzes and exams*

University regulations require that students be allowed to make up examinations which have been missed due to illness or other unavoidable circumstances. Students with mandatory religious obligations or UI authorized activities must discuss their absences with me as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

An unavoidable circumstance is defined as an event beyond the student's control and often involves a serious and unexpected hospitalization, a family tragedy, or a related incident. Such circumstances do not include attendance at a wedding, a family vacation, obligations related to work or other such matters.

The instructor of a student participating in an authorized University of Iowa activity is sent a statement generally by email from the University of Iowa official in charge of the event before the absence occurs. This statement will include the specific date and time that the student will miss class. Activities related to employment, fraternities or sororities, or volunteer activities are not University of Iowa authorized activities that are considered for make-ups. Make-ups must be arranged as soon as possible and must be generally completed within one week of the missed quiz or exam.

### *Calculators*

For certain problems ALEKS activates a build-in calculator. Non-ALEKS calculators are not allowed in class and their use at home is discouraged. No calculators or other hand-held electronic devices are allowed on exams. Exams are written in such a way that a calculator is not necessary.

*Timely completion of assignments:* Late assignments are not accepted.

### *Academic Integrity*

All students in CLAS courses are expected to abide by the [CLAS Code of Academic Honesty](#). Undergraduate academic misconduct must be reported by instructors to CLAS according to [these procedures](#).

You are expected to work on your assignment without getting help from outside sources. The points will be taken off for any unjustified answer on an assignment. If your instructor suspect cheating during a quiz or an exam, an oral examination may be given.

<https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code>).

### *Expected classroom behaviors*

It is expected that you will behave with respect to other students in the class and to your instructor. In particular this means turning off (or silencing) your cell phone. You should not be

sending text messages, browsing Internet, playing games, or listening to music during class.

### *Expectations for assignments and examinations*

The homework for this course is designed to help you master your knowledge related to the topics covered during lecture. As such, you may work on the homework problems with others or use online resources. However, please be aware that to master the skills needed for this course, practice is required and that to do well on the final exam you will need to work many of these problems multiple times without help. Be sure to test your knowledge by doing much of the homework on your own.

### *Student Complaints*

Students with a complaint about a grade or a related matter should first discuss the situation with the instructor and/or the course supervisor (if applicable), and finally with the Director or Chair of the school, department, or program offering the course.

Undergraduate students should contact [CLAS Undergraduate Programs](#) for support when the matter is not resolved at the previous level.

### *Drop Deadline for this Course*

You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the [drop deadline for this course](#) here. When you drop a course, a “W” will appear on your transcript. The mark of “W” is a neutral mark that does not affect your GPA. Directions for adding or dropping a course and other registration changes can be found on the [Registrar’s website](#). Undergraduate students can find policies on dropping and withdrawing [here](#).

### *How to Succeed in MATH:1020*

- Expect to spend at least 8 hours weekly outside of the classroom during the assignments. More time may be needed to prepare for exams.
- Ask questions in class.
- Check your UI email regularly.
- Log into the course ICON page daily.
- Communicate with your instructor and visit during office hours.
- Visit Math Tutorial Lab (125 MLH, <https://math.uiowa.edu/math-tutorial-lab> ).
- Create a study schedule so that you don’t fall behind.
- Work on ALEKS several days a week. Do not wait until the module deadline to start working.
- Complete practice quizzes and exams.

### *Campus Resources for Students*

Math Tutorial Lab: The Math Lab offers free tutorial services for the course material.

Participation is optional, but strongly recommended. It is located in 125 MLH and it is staffed by teaching assistants from the Department of Mathematics. This semester Math Tutorial lab offers both in person and virtual help.

Tutor Iowa: <https://tutor.uiowa.edu/>

## **ICON for Students at UI**

### *Getting Started*

1. Be sure to have your UI HawkID and password available. If you do not, please visit ITS HawkID Tools for assistance ([hawkid.uiowa.edu](http://hawkid.uiowa.edu)).
2. Login to [ICON](#) with your UI HawkID and password and look for your course for this semester.

### *Basic Troubleshooting (if ICON is not working)*

- Username/Password not working?
  - The login information (username and password) for ICON is the same as for your UI email account.
  - For help with Username and Password, please visit [ITS HawkID Tools](#) or contact the ITS Help Desk at 319-384-4357 or [its-helpdesk@uiowa.edu](mailto:its-helpdesk@uiowa.edu).
- If you get an error message, check for Browser and Java Issues on your computer.
- If you are unable to access course content or activities (e.g., Tests, Discussions, Assignments, etc.), contact your instructor.
- Check general [Technology Support for Students](#)

## **University Policies**

[Accommodations for Students with Disabilities](#)

[Basic Needs and Support for Students](#)

[Classroom Expectations](#)

[Exam Make-up Owing to Absence](#)

[Free Speech and Expression](#)

[Mental Health](#)

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[Non-discrimination](#)

[Religious Holy Days](#)

[Sexual Harassment/Misconduct and Supportive Measures](#)

[Sharing of Class Recordings](#)