MATH:1440:0AAA Mathematics for the Biological Sciences
University of Iowa
The College of Liberal Arts and Sciences
Fall 2024

Course meeting time and place: MWF 2:30-3:20 in W10 PBB
Department of Mathematics: Webpage

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. **Regardless of the lecture or discussion section you are enrolled in, you will be using the ICON course for MATH:1440:0AAA.** Assignments, handouts, announcements, and grades will be posted on ICON. It is important that you check ICON regularly.

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.

Course Instructors:

Instructor: Dr. Olga Sokratova Office: 225K MacLean Hall **Student drop-in hours:** MWF 10:30 - 11:20a.m., and by appointment **Phone:** 319-335-3873 **E-mail:** olga-sokratova@uiowa.edu	**Dr. Colleen Mitchell** (team teacher) **Office:** 225E MacLean Hall **Student drop-in hours:** TBA **Phone:** 319-335-3813 **Email:** colleen-mitchell@uiowa.edu

Lecture Information
Each student is enrolled in the following lecture: **Lecture 0AAA:** 2:30 – 3:20 pm, MWF, W10 PBB.

Discussion Section Information
Each student is also enrolled in one discussion section. These discussion sections are taught by teaching assistants who are graduate students in the Department of Mathematics.

The meeting time, classroom information, and instructor information for each section follows. Instructor office hours and Math Lab hours will be posted on ICON.

Section 0A02: 5:00 – 5:50 pm TTh, 110 MLH TA: Lucy Henneker TA Email: lucy-henneker@uiowa.edu Office: 261 MacBride Hall (MH) Office Hours: Fri 9:30-10:20am Math Lab Hours: MWF 1:30-2:20pm, Tues 10:30am-12:30pm	**Section 0A04:** 9:30 – 10:20 am TTh, 110 MLH TA: Jinyang Wu TA Email: jinyang-wu@uiowa.edu Office: 225N MacLean Hall Math Lab Hours: Monday 10:30 to 11:30. Office Hours: Wednesday 9:30 to 10:30
Section 0A05: 2:00 – 2:50 pm TTh, 218 MLH: TA: Lara Kallem TA Email: lara-kallem@uiowa.edu Office: 261 MacBride Hall (MH) Office Hours: Thursday 12:30-1:30 Math Lab Hours: M 10:30-11:30, T 11:30-1:30, W 10:30-11:30 & 3:30-4:30	**Section 0A08:** 3:30 – 4:20 pm TTh, 210 MLH TA: Lucy Henneker TA Email: lucy-henneker@uiowa.edu Office: 261 MacBride Hall (MH) Office Hours: Fri 9:30-10:20am Math Lab Hours: MWF 1:30-2:20pm, Tues 10:30am-12:30pm
Section 0A16: 3:30 – 4:20 pm TTh, 205 MLH TA: Fatemeh Shanehsazan TA Email: fatemeh-shanehsazan@uiowa.edu Office: TBA Office Hours: TBA Math Lab Hours: TBA	**Section 0A17:** 5:00 – 5:50 pm TTh, 221 MLH TA: Fatemeh Shanehsazan TA Email: Fatemeh-shanehsazan@uiowa.edu Office: TBA Office Hours: TBA Math Lab Hours: TBA
Section 0A20: 11:00 – 11:50 pm TTh, 213 MLH TA: Kerry Tarrant TA Email: kerry-tarrant@uiowa.edu Office: B20F MacLean Hall Office Hours: Th 1:30-2:30 PM Math Lab Hours: Th 12:30-1:30 PM	**Section 0A22:** 9:30 – 10:20 am TTh, 221 MLH TA: Changliang Wei TA Email: changliang-wei@uiowa.edu Office: TBA Office Hours: TBA Math Lab Hours: TBA
Section 0A23: 12:30 – 1:20 pm TTh, 213 MLH TA: Sam Holen TA Email: samuel-holen@uiowa.edu Office: MLH B20J Office Hours: 11:00-12:00 Thursdays Math Lab Hours: 12:30-1:30 Wednesdays	**Section 0A24:** 3:30 – 4:20 pm TTh, 23 PH TA: Lara Kallem TA Email: lara-kallem@uiowa.edu Office: 261 MacBride Hall (MH) Office Hours: Thursday 12:30-1:30 Math Lab Hours: M 10:30-11:30, T 11:30-1:30, W 10:30-11:30 & 3:30-4:30

DEO Contact Information: Ryan Kinser 14 MLH, ryan-kinser@uiowa.edu

Course E-mail: *All course related email should be sent to*: math-1440@uiowa.edu

- If you need to reach only Dr. Sokratova: olga-sokratova@uiowa.edu
- You can find the contact info for your TA on ICON under "about your instructors" or in the chart above.

Description of Course: This course consists largely of precalculus topics, including relations, functions, coordinate systems, graphing, polynomials, trigonometric functions, and logarithmic and exponential functions. Examples and applications are chosen from across the biological sciences. Material from this course may be applied to fields including epidemiology, ecology, orthopedics or exercise science, seismology, audiology, physiology, biochemistry, genetics, cell and molecular biology.

Learning Objectives: The primary objective of this course is for students to become familiar with the core concepts of precalculus level mathematics and to be able to use those concepts to solve problems arising in the biological sciences. Students will learn how to solve basic equations such as linear equations, quadratic equations, rational equations and equations involving radicals. Special emphasis will be given to biological applications and modeling with each equation type. Students will learn how to solve problems involving inequalities and absolute value equations and inequalities and apply these concepts to error bounds. Students will learn to use exponential and logarithmic functions in a variety of applications including biochemical, chemical, economic, and ecological problems. Students will be introduced to the use of trigonometric functions and certain trigonometric identities. Finally, students will learn to solve systems of linear equations.
Math1440 satisfies the general education requirement for quantitative and formal reasoning (QFR). It is designed to help you to develop important analytic skills and methods including the ability to present and evaluate mathematical reasoning.

Textbook/Materials: All materials are available via ICON Direct.

A) Textbook with MyLab for homework assignments.
   - Title: MyLab Math with PreCalculus, 7th edition.
     ISBN 9780135925782
   - Authors: Lial, Hornsby, Schneider, Daniels
   - Publisher: Pearson
   - See instructions on ICON
   - 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. You will lose all access to the eText features in ICON. More information about opting out is available at the ITS opt-out site.

B) TopHat license for in-class questions.
   - You should have received an invitation via email.

C) Gradescope Account.
   - Gradescope is a homework/test grading program that we will use. You will have access to this program through ICON, and it will be linked to your university ID.
   - There is no charge for you to use this program.

Academic Honesty and Misconduct
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. Graduate academic misconduct must be reported to the Graduate College according to Section F of the Graduate College Manual.

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. No collaboration is allowed for quizzes or exams.

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. Graduate students should contact the CLAS Associate Dean for Graduate Education and Outreach and Engagement when additional support is needed.

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.

Grading System: Letter grades with +/- will be used. The grade of A+ will only be given in extraordinary situations. Grades will be assigned with a standard scale:

A	**B**	**C**	**D**	**F**
	B+ 87-89.9	C+ 77-79.9	D+ 67-69.9	F < 59.9
A > 93	B 83-86.9	C 73-76.9	D 63-66.9	
A- 90-92.9	B- 80-82.9	C- 70-72.9	D- 60-62.9	

Course Grades:

20% Weekly homework on MyLab
5% Discussion activities
5% Lecture/in class questions with TopHat
20% Weekly quizzes in discussion
30% Midterms
20% Final: The final exam:

Date and Time of Midterm Exams:
Midterm 1: Thursday 9/26 6:30-8:00 PM. Location TBA
Midterm 2: Thursday 10/17 6:30-8:00 PM. Location TBA
Midterm 3: Thursday 11/21 6:30-8:00 PM. Location 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. **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).

Attendance: You are expected to attend class, and a portion of the final grade is directly related to your attendance since you must attend lecture to receive credit for the In Class questions with TopHat and attend discussion to receive credit for the discussion activities.
For discussion absences, email your TA.
For all other absences, email math-1440@uiowa.edu.

Missed work will be accepted only for approved excused absences. (Official policies and link to absence form are available here.) 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.

Tentative Calendar

A detailed calendar is posted on ICON. The instructors will make adjustments to this schedule as necessary. Any changes will be announced in class and posted on ICON. Detailed instructions and deadlines for all assignments are found on ICON.

DATE	SECTIONS	TOPIC
Week 1 8/26-8/30	1.1 1.2 1.4 1.5	Linear Equations Applications Quadratic Equations Applications
Week 2 9/02-9/06	1.6 1.7 1.8	Other Types of Equations Inequalities Absolute Value
Week 3 9/09-9/13	2.1 2.2 2.4	Graphs Circles Linear Functions
Week 4 9/16-9/20	2.5 2.7 2.8	Linear Models Graphing Techniques Function Operations
Week 5 9/23-9/27	 4.1	Chapter 1-2 wrap up **Midterm 1: Thursday 9/26 6:30-8:00 PM** Intro to Exponents and Logs
Week 6 9/30-10/04	4.1 4.2 4.3	Inverse Functions Exponential Functions Logarithmic Functions
Week 7 10/07-10/11	4.4 4.5 4.6	Evaluating Logarithms Exponential and Logarithmic Equations Applications
Week 8 10/14-10/18	 5.1	Semi Log Plots Chapter 4 Wrap up **Midterm 2: Thursday 10/17 6:30-8:00 PM** Angles
Week 9 10/21-10/25	5.2 5.3 5.4	Trigonometric Functions Special Angles Applications Chapter 5 Wrap Up
Week 10 10/28-10/27	6.1 6.2 6.3	Radian Measure Unit circle Graphs of Sine and Cosine
Week 11 11/04-11/08	6.4 7.1 7.2	Translations of Sine and Cosine Fundamental Identities Sum and Difference

Week 12 11/11-11/15	7.3 7.4 8.3	Double and Half Angle Inverse Trig Functions Vectors and Applications
Week 13 11/18-11/22	8.4 9.1	Dot Product Chapter 5-8 Wrap up **Midterm 3: Thursday 11/21 6:30-8:00 PM** Systems of Linear Equations
No Class 11/25-11/29		
Week 14 12/02-12/06	9.1 9.2 9.4	Systems of Linear Equations (cont.) Matrix Solutions Partial Fractions
Week 15 12/09-12/13		Wrap up Chapter 9 Review
Exam Week 12/16-12/20	**Final Exam**	**Final Exam (time announced in week 5)**

College of Liberal Arts and Sciences (CLAS) Course Policies

Attendance and Absences
Exam Policies

Communication: UI Email
Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community.

Where to Get Help
Math Tutorial Lab 125 MLH (free of charge, for all undergraduate students)
Math Platoon (free of charge, for military-connected students)
Tutor Iowa

Supplementary Instructions Jess is the SI Leader for MATH:1440. The SI session times:
Mondays 6:30-7:20 PM
Thursdays 3:00-3:50 PM
Fridays 1:30-2:20 PM
SI sessions will begin on Tuesday, September 3rd and all sessions will be offered in the Academic Resource Center (ARC), which is located on the ground floor of the Iowa Memorial Union (IMU). We will not offer SI sessions during fall break (Sunday, November 24 – Sunday, December 1), or during finals week (Sunday, December 15 – Friday, December 20).

University Policies