**Course Instructor**

**Instructor:** Dr. Marge Murray  
**Campus Address:** 172 EPB  
**Phone:** (319) 335-0318  
**Email:** margaret-a-murray@uiowa.edu  
**Office Hours:** Thursday 12:45–1:45pm via Zoom, and by appointment.

**Department**

College of Liberal Arts and Sciences  
Department of Mathematics  
[https://math.uiowa.edu/](https://math.uiowa.edu/)  
**Chair (DEO):** Dr. Ryan Kinser  
**Email:** ryan-kinser@uiowa.edu

**Class Meeting Times**

This course is self-paced within a structure of scheduled course work. Students will progress through the course as a cohort and will complete and submit course work online. There are no required scheduled (online) class meetings.

**Course Site**

To access the course site, log into Iowa Courses Online (ICON) using your Hawk ID and password.  
[http://icon.uiowa.edu/index.shtml](http://icon.uiowa.edu/index.shtml)

**Prerequisites**

Standard courses in high school mathematics and science.

**Course Description and Goals**

This course explores the wide diversity of cultures and individuals who have made contributions to the mathematical sciences. In particular, we will:

- Reflect on our own mathematical life stories, as well as our prior beliefs about mathematics and mathematical scientists, attending carefully to how our educational and cultural experiences have shaped these stories and beliefs.
- Examine stereotypes and biases—both explicit and implicit—about mathematical scientists, the ways in which popular culture can both perpetuate and undermine those biases, and devise constructive ways of addressing them.
- Explore the contributions to mathematics and the quantitative sciences from diverse cultures throughout history.
- Explore the contributions, both historical and contemporary, of women, people of color, and members of other underrepresented groups to mathematics and the quantitative sciences.
- Examine, in detail, specific life stories and accomplishments of diverse contributors to the quantitative sciences, including the challenges they faced and the factors that led to their success.
- Revisit our own mathematical life stories and prior beliefs, revising them, as necessary, to incorporate a larger vision of the mathematical sciences and the people who do mathematical work.

The course meets the following degree requirements:

- **GE CLAS Core:** Diversity & Inclusion

This course is designed for undergraduate students both inside and outside the mathematical sciences. No specific mathematical knowledge is assumed beyond standard high school coursework.
Media/System Requirements

Sufficient technology and internet access are required to complete online classes when you take a course at The University of Iowa. While tablets, smartphones, and other mobile devices may allow for some completion of coursework, they are not guaranteed to work in all areas. Please ensure you have a Windows or Mac based computer available to complete coursework in the event your selected mobile device does not meet the needs of the course.

Here are the specific media/system requirements applicable to this course:

- **Student-provided personal computer** (Windows or Mac).
- **Computer with reliable Internet access.** A wired Ethernet connection to the internet is very strongly recommended. Wireless and cellphone data connections may experience connection problems. Android and iOS operating systems are not fully supported at this time. For specific requirements, go to the Distance and Online Education Support Page and click on Technical Requirements/Download Page.

Students who need assistive technologies will have different computer and technology requirements. Please check with Student Disability Services to determine the requirements for the specific technologies needed to support your online classes.

For questions regarding virtual classrooms (i.e., Zoom) or UICapture (Panopto), please contact Distance and Online Education Technical Support by selecting Contact Technical Support at the Distance and Online Education Support Page or by calling (319) 335-3925.

Need help with ICON or your HawkID? Please contact the ITS Helpdesk (319-384-HELP).

Required Textbooks/Media

**Required textbooks** for this course:


**Note:** The books above may be ordered from the vendor of your choice (e.g. Amazon) or from a local bookstore. Listed below are bookstores in the Iowa City area; students may order books from these vendors online (visit vendor website), or by phone. Walk-in orders are also accepted. **Exact editions are required.**

- **Iowa Hawk Shop** Web: [https://www.bkstr.com/iowastore/home](https://www.bkstr.com/iowastore/home) Phone: 319.335.3179

Students will also read short articles and book chapters, and view several films, access to which will be provided on ICON:

- Brief selections will be drawn from various sources, including:

- Films will include:
  - *Hidden Figures* (2016)
  - *The Imitation Game* (2014)

Access to these materials will be provided on ICON.

**Grading Criteria**

Your course grade will be based on points earned on the following items:

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
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<tbody>
<tr>
<td>Quizzes (10)</td>
<td>100</td>
</tr>
<tr>
<td>Reflections (5)</td>
<td>150</td>
</tr>
<tr>
<td>Online Discussions (15)</td>
<td>375</td>
</tr>
<tr>
<td>Major Paper (1)</td>
<td>250</td>
</tr>
<tr>
<td>Final Reflection (1)</td>
<td>125</td>
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<tr>
<td><strong>Total Possible:</strong></td>
<td><strong>1000</strong></td>
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Your final grade is based on total points earned, according to the scheme below, following a +/− grading system (with A as the highest possible grade):

<table>
<thead>
<tr>
<th>Total Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>895+</td>
<td>A−</td>
</tr>
<tr>
<td>795−945</td>
<td>B−</td>
</tr>
<tr>
<td>695−745</td>
<td>C−</td>
</tr>
<tr>
<td>595−645</td>
<td>D−</td>
</tr>
</tbody>
</table>

**Course Structure**

This course is being offered over the World Wide Web as a Distance Education offering. Students will **login to the course site** on ICON to access the course materials (syllabus, assignments, schedules), and the discussions forum. For details of the course assignments and activities, see the **Course Work** section of this syllabus.

Course content consists of the textbook, some additional articles, and several websites.

Students are expected to visit the course site regularly to:

- **Access assigned course materials (posted on the Modules page)** such as pre-recorded lectures and journal articles.
- **Review the course homepage regularly** for any updates on the Announcements and/or Calendar pages.
- **Submit** Assignments corresponding to each weekly Module.
Course Work

Quizzes (10; 100 points total):
There will be ten online quizzes covering material on lecture material, reading assignments, and films, during weeks 2, 4, 5, 7, 8, and 10–14. Each quiz is worth 10 points. Due dates are listed in the Course Calendar, and quizzes are scored automatically upon submission.

Reflections (5; 150 points total):
Students are required to complete and submit six informal Reflection papers on lecture material, reading assignments, films, and class discussion, during Weeks 1–4 and 6. In particular, the Week 1 Reflection will be a Mathematical Autobiography to which students will return later in the semester. Each Reflection is worth 30 points and should be completed in Microsoft Word and submitted online. Due dates are listed in the Course Calendar.

Online Discussions (15; 375 points total):
During the first week of class, students will participate in the Introduce Yourself Discussion forum, in which they'll get to know their instructor and fellow classmates. In addition, students will participate in fourteen weekly online Discussion forums, each based on questions from the instructor relevant to the reading, lectures, and videos for that week. Students will answer instructor questions and then discuss the questions with classmates and the instructor; participation in each online discussion is worth 25 points. See the Course Calendar for posting deadlines.

Major Paper (1; 250 points total)
Students will write a Major Paper, 5–7 pages in length: an essay that explores the life and work of a mathematician (or group of mathematicians) from an underrepresented group whose experiences you’d like to understand better. Each student should select a subject whose lived experience helps to expand their own sense of what it means to do mathematical work. This paper will be submitted in stages, with written feedback from me on each stage:

- A Proposal, worth 25 points, detailing the topic about which you wish to write (Week 5).
- An Outline & Annotated Bibliography, worth 25 points (Week 7).
- A First Draft, worth 50 points (Week 9).
- A Final Draft, worth 150 points (Week 12).

In addition, students will give a brief presentation on their essay as part of the Week 15 Online Discussion.

Final Reflection (1; 125 points total)
At the end of the course, each student will submit a final written reflection on the ways in which their attitude toward both the mathematical sciences and the people who carry out mathematical work has changed since they first wrote their Mathematical Autobiography in Week 1. This Final Reflection is due during Week 16.
Course, College, and University Policies:

As a registered student in a Distance and Online Education course through The University of Iowa, you are responsible for the course and college/university policies posted below.

Course Policies:

Students taking Distance and Online Education courses at the University of Iowa are entitled and held to the same student rights and responsibilities as on campus students; see the Distance and Online Education Policies page, https://distance.uiowa.edu/policies, for more information. In addition, the following specific policies apply to students registered in this online course.

Communications: Students can expect to receive weekly communications from the instructor (via course “Announcements”) introducing assigned coursework. Students may wish to configure their ICON account so that announcements come directly to their University of Iowa (@uiowa) email. Communications between students and instructor will largely be carried out via University of Iowa (@uiowa) email, so students are responsible for checking that email on a regular, ongoing basis. You can expect your instructor to respond to your inquiries within 24–48 hours.

Assignment Format:

- Each Reflection and each submission associated with the Major Paper should be submitted as a single Microsoft Word file, double-spaced, with one-inch margins, in a legible 12-point font (e.g., Times New Roman). Include your name, course number, and assignment title on the first page of each submission, and number each page clearly.
- Instructions for completing Online Discussions are provided in the corresponding Assignment.
- For your own protection, always keep a copy of all work you submit for the course.

Exam Registration: There are no examinations in this course.

Due Dates and Missed Deadlines: Due dates are stated in the Course Calendar. Many assignments have both a due date and a grace period, during which you may submit without penalty; the end date of the grace period will be considered the absolute deadline for the assignment. If for any reason you are unable to complete an assignment by the agreed-upon deadline, you should contact me via email as soon as possible, preferably in advance. As a general rule, I do not grant extensions on deadlines except in case of illness or injury, family emergency, required university activities, mandatory religious observances, and other unavoidable circumstances, in accordance with College of Liberal Arts and Sciences policy on absences.

Netiquette: The term netiquette refers to the practice of communicating effectively and respectfully online. In this online course, it’s especially important to communicate with your instructor and your classmates in ways that communicate content while consistently maintaining courtesy and respect. We’ll discuss this further as the course progresses.

Sharing of Course Recordings: Recorded lectures are the intellectual property of the faculty, and they may not be shared or reproduced without the explicit, written consent of the faculty member. Further, students may not share these sessions with those not in the class or upload them to any other online environment. Doing so constitutes a breach of the Code of Student Life, and, in some cases, a violation of state and federal law, including the Federal Education Rights and Privacy Act (FERPA).
College & University Policies (Fall 2023):

Administrative Home of the Course: The administrative home of this course is the UI College of Liberal Arts and Sciences, which governs academic matters relating to the course such as the add/drop deadlines, the second-grade-only option, issues concerning academic fraud or academic probation, and how credits are applied for various graduation requirements. Different UI colleges may have different policies. See the CLAS Academic Policies Handbook for details. Questions? Contact your academic advisor or the Office of Academic Programs and Student Development, 120 Schaeffer Hall, (319) 335-2633, clasps@uiowa.edu.

Absences & Attendance: In an online course, “attendance” is defined in terms of academic activity (e.g., submitting an academic assignment, participating in online discussion, initiating contact with the instructor to ask a question about course content). In the event of illness, military service obligations, religious observance, participation in a University-sponsored activity, or unavoidable personal circumstances that may impact your ability to participate in academic activity in a timely fashion, students should communicate with the instructor as soon as possible. For further details see the CLAS policy on Attendance and Absences and Chapter 8: Absences from Class in the University Operations Manual.

Academic Honesty, Academic Misconduct, and Use of AI Tools: All students are expected to abide by the College of Liberal Arts & Sciences (CLAS) Code of Academic Honesty. As your instructor, I am expected to follow CLAS procedures for reporting academic misconduct to the College.

Generative AI (such as ChatGPT) is an emerging technology that can be used to create new content, including written text. While there are a variety of settings in which this technology will likely become a go-to tool, our Math 1210 course is not one of them. In Math 1210 you will devote time and effort to developing the ability to express your own views, in your own words. With this in mind, I consider use of generative AI tools in this course to be a form of academic dishonesty.

Accommodations for Students with Disabilities: The University of Iowa is committed to providing an academic experience that is accessible to all students. A student may request academic accommodations for a disability (such as a mental health, attention, learning, vision, physical or health-related condition) through the Student Disability Services (SDS) office. The student is responsible for discussing specific accommodations with the instructor. Note that accommodations are not granted retroactively but from the time of the student’s request to the instructor onward; additionally, accommodations must be requested at least two weeks in advance of the related assignment or exam.

Communication via UI Email: Students are responsible for all official correspondence sent to their UI email address (@uiowa.edu) and must use this address for communication with instructors or staff in the UI community. Emails should be respectful and brief; more complex matters can be addressed during the instructor’s drop-in hours, for example. While they may choose to do so, faculty are not required to answer email after business hours or during the weekends.

Complaint Procedures: If at any time you have concerns about the class or your performance in it, please begin by contacting the instructor. If you do not feel that your concern has been resolved satisfactorily, you may contact the Department Chair (contact information provided at the top of page one of this syllabus). If not resolved, you may bring your concern to the CLAS Office of Academic Programs. See the CLAS statement of Student Rights and Responsibilities for further details.

Drop Deadline for this Course: You may drop an individual course before the add/drop date; if you drop after this date the grade of “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 CLAS courses at the CLAS Academic Policy website.

**Free Speech and Expression:** The University of Iowa supports and upholds the First Amendment protection of freedom of speech and the principles of academic and artistic freedom. We are committed to open inquiry, vigorous debate, and creative expression inside and outside the classroom. Visit Free Speech at Iowa for more information on the university’s policy on free speech and academic freedom.

**Mental Health Resources and Student Support.** Students are encouraged to be mindful of their mental health seek help as a preventive measure, or when they feel stressed or overwhelmed. Students should talk to their instructors for guidance with specific class-related concerns and are encouraged to contact University Counseling Service (UCS) at 319-335-7294 during regular business hours to schedule an appointment. UCS offers individual, couples, and group counseling, and can also make referrals to other resources. UI Student Health also addresses related concerns. These visits are free to students. Find out more about university and community mental health resources at the Mental Health at Iowa website.

**Student Care & Assistance** provides support to University of Iowa students experiencing a variety of crisis and emergency situations, including but not limited to medical issues, family emergencies, unexpected challenges, and sourcing basic needs such as food and shelter. More information on the resources related to basic needs can be found at the Division of Student Life Basic Needs website. Students are encouraged to contact Student Care & Assistance in the Office of the Dean of Students (Room 135 IMU, dos-assistance@uiowa.edu, 319-335-1162) for assistance and further information.

**Sexual Harassment/Sexual Misconduct and Supportive Measures:** The University of Iowa prohibits all forms of sexual harassment, sexual misconduct, and related retaliation. The Policy on Sexual Harassment and Sexual Misconduct governs actions by students, faculty, staff and visitors. Incidents of sexual harassment or sexual misconduct can be reported to the Title IX and Gender Equity Office or to the Department of Public Safety. Students impacted by sexual harassment or sexual misconduct may be eligible for academic supportive measures and can learn more by contacting the Title IX and Gender Equity Office or watching the Office of Student Life’s Confidential Resources video.

**Statement on Non-Discrimination and Inclusion:** The University of Iowa prohibits discrimination in employment, educational programs, and activities on the basis of race, creed, color, religion, national origin, age, sex, pregnancy, disability, genetic information, status as a U.S. veteran, service in the U.S. military, sexual orientation, gender identity, associational preferences, or any other classification that deprives the person of consideration as an individual. The university also affirms its commitment to providing equal opportunities and equal access to university facilities. For more information, contact the UI Office of Institutional Equity.

In keeping with these policies, we aim to ensure this online classroom is a respectful and inclusive place for people of all identities and backgrounds. Toward this goal, students are invited share their pronouns and chosen/preferred names in MyUI, which is accessible to instructors and advisors.

**Course Calendar** follows.
This online course is organized within a structure of scheduled course work (see weekly calendar below). Although you are not required to meet in a classroom, we will progress through the course materials as a class. For this reason, you must manage your time effectively in order to complete the assigned course work according to the due dates listed in the calendar below.

### Week 1 | Module 1: Mathematical Autobiographies and Narratives (21–27 August)

**Learning Objectives:**
1. To introduce yourself to your classmates and your instructor in a brief video.
2. To view and respond to your classmates’ introductory videos.
3. To reflect, in writing, about key moments in your own relationship to mathematics.

**Due Dates:**
- **Introduce Yourself Discussion Forum:** First post due Thursday 24 August; two additional posts due Sunday 27 August.
- **Week 1 Online Discussion:** First post due Thursday 24 August; two additional posts due Sunday 27 August.
- **Week 1 Reflection:** Due Sunday 27 August.

**Learning Activities, Assignments, and Assessments:**
- Review the information posted under the Getting Started module.
- Post a brief video at the Introduce Yourself assignment site to introduce yourself to your professor and your peers.
- View Marge’s lecture, Personal Stories about Mathematics.
- Discuss: Participate in the Week 1 Online Discussion, Personal Stories about Mathematics.
- View Marge’s lecture, Crafting a Mathematical Autobiography.
- Submit the Week 1 Reflection, My Mathematical Autobiography.

### Week 2 | Module 2: What is Mathematics and Who Can Do It? (28 August–3 September)

**Learning Objectives:**
1. To develop working definitions of mathematics and what it means to do mathematics.
2. To list examples of people of different genders, nationalities, races, ethnicities, and sexual orientations who identify as mathematicians.
3. To reflect, in writing, about whether and how diversity matters in mathematics.

**Due Dates:**
- **Week 2 Preview Quiz:** Due Wednesday 30 August.
- **Week 2 Online Discussion:** First post due Thursday 31 August; two additional posts due Sunday 3 September.
- **Week 2 Reflection:** Due Sunday 3 September.

**Learning Activities, Assignments, and Assessments:**
- Take the Week 2 Preview Quiz to assess your sense of mathematics and mathematicians.
- View Marge’s lecture, What is Mathematics and Who Can Do It?
- Read Profiles 12–15 in Part II of Living Proof (John Urschel, Autumn Kent, Robin Wilson, and Angie Hodge).
- Browse in the websites Women Doing Mathematics, MathematicallyGiftedandBlack.com, and Lathisms.org, to get a sense of the wide range of women, African-Americans, and members of the Latinx community who identify as mathematicians today.
- View Marge’s lecture, Mathematics & Mathematicians.
- Discuss: Participate in the Week 2 Online Discussion, Mathematics & Mathematicians.
- Submit the Week 2 Reflection, Why Does It Matter?
### Week 3 | Module 3: Cultural Messages About Mathematics (4–10 September)

**Learning Objectives:**

1. To identify and analyze stereotypes about mathematics and mathematical scientists in popular culture.
2. To discuss cultural biases about mathematics in popular culture and the effects they have, and have had, on yourself and others.

**Due Dates:**

- **Week 3 Online Discussion:** First post due Thursday 7 September; two additional posts due Sunday 10 September.
- **Week 3 Reflection:** Due Sunday 10 September.

**Learning Activities, Assignments, and Assessments:**

- View Marge’s lecture, *Cultural Messages about Math—and Mathematicians*.
- View Pop Culture Detective’s 2017 YouTube video, *The Adorkable Misogyny of the Big Bang Theory*.
- Discuss: Participate in the Week 3 Online Discussion: *Cultural Assumptions about Math & Who Can (and Can’t) Do It*.
- Submit the Week 3 Reflection, *Responding to Cultural Messages*.

### Week 4 | Module 4: Cultural Histories of Mathematics (11–17 September)

**Learning Objectives:**

1. To describe the way in which the history of mathematics was described in the West during the late 19th and early 20th centuries.
2. To describe alternative and expanded versions of this history that have emerged during the 20th and early 21st centuries.
3. To describe a specific, cross-cultural episode in the history of mathematics: the development of the Hindu-Arabic numeral system.

**Due Dates:**

- **Week 4 Preview Quiz:** Due Wednesday 13 September.
- **Week 4 Online Discussion:** First post due Thursday 14 September; two additional posts due Sunday 17 September.
- **Week 4 Reflection:** Due Sunday 17 September.

**Learning Activities, Assignments, and Assessments:**

- Take the Week 4 Preview Quiz to assess your prior knowledge of the cultural history of mathematics.
- View: Marge’s lecture, *Where Does Our Mathematics Come From?*
- Read: Selections from *Crest of the Peacock*:
  - The Development of Mathematical Knowledge, pp. 3–12.
  - Early Indian Numerals and their Development, 338–349.
  - Medieval Islam’s Role in the Rise and Spread of Indian Numerals, 461–466.
- View: Marge’s lecture, *Numbers, Numerals, and Cultural Histories of Math*.
- Discuss: Participate in the Week 4 Online Discussion, *Who and Where Does Our Mathematics Come From?*
- Submit: the Week 4 Reflection, *Why Does it Matter?*
## Week 5 | Module 5: Mathematics & Colonialism at the Movies (18–24 September)

**Learning Objectives:**

1. To describe the ways that colonial attitudes affected the Western response to the Indian mathematician Ramanujan.
2. To describe and analyze the depiction of mathematicians in the film *The Man Who Knew Infinity*.
3. To prepare a proposal for your Major Paper: an essay that explores the life and work of a mathematician (or group of mathematicians) from an underrepresented group whose experiences you’d like to understand better.

**Due Dates:**

- **Week 5 Online Discussion:** First post due Thursday 21 September; two additional posts due Sunday 24 September.
- **Major Paper Proposal:** due Sunday 24 September.
- **Week 5 Quiz:** due Sunday 24 September.

**Learning Activities, Assignments, and Assessments:**

- **Watch** Marge’s brief lecture, *Your Major Paper: Proposal*.
- **Read** Marge’s brief *Guide to Selecting a Topic*.
- **Watch** Marge’s brief lecture, *Proof, Belief, and Colonialism at the Movies*.
- **Discuss:** Participate in the Week 5 Online Discussion, *Hardy, Ramanujan, and Mathematicians On-Screen*.
- **Submit** the proposal for your Major Paper.
- **Take** the Week 5 Quiz, a brief assessment of what you’ve learned from this week’s lecture and reading.

## Week 6 | Module 6: Women in the Story of Mathematics (25 September–1 October)

**Learning Objectives:**

1. To sketch a timeline of the first women to appear in historical accounts of mathematics.
2. To describe the factors that enabled these women to make historically significant contributions to mathematics in their time and place.
3. To describe some of the obstacles women have historically faced in their efforts to contribute to mathematics.

**Due Dates:**

- **Week 6 Online Discussion:** First post due Thursday 28 September; two additional posts due Sunday 1 October.
- **Week 6 Reflection:** Due Sunday 1 October.

**Learning Activities, Assignments, and Assessments:**

- **View:** Marge’s lecture, *Women in the Story of Mathematics*.
- **Read:** Browse in the website, *Biographies of Women Mathematicians at Agnes Scott College* ([https://www.agnesscott.edu/lriddle/women/women.htm](https://www.agnesscott.edu/lriddle/women/women.htm)), paying special attention to the chronological list of names and the interactive timeline.
- **Discuss:** Participate in the Week 6 Online Discussion, *Women Mathematicians, Then and Now*.
- **Submit:** the Week 6 Reflection, *Women in Mathematics*. 
### Week 7 | Module 7: African-Americans in the History of Mathematics (2–8 October)

**Learning Objectives:**

1. To sketch a brief history of the participation of African-Americans in the mathematical community.
2. To describe some of the achievements of African-Americans in mathematics.
3. To describe the obstacles African-Americans have faced in their efforts to contribute to mathematics.
4. To produce a rough outline and an annotated bibliography for your Major Paper.

**Due Dates:**

- **Week 7 Online Discussion:** First post due Thursday 5 October; two additional posts due Sunday 8 October.
- **Major Paper Outline & Annotated Bibliography:** Due Sunday 8 October.
- **Week 7 Quiz:** Due Sunday 8 October.

### Week 8 | Module 8: Reading about *Hidden Figures*, Part I (9–15 October)

**Learning Objectives:**

1. To describe the social, political, and scientific factors that led to the participation of African-American women mathematicians in the US aeronautics program.
2. To describe the early mathematical experiences of Dorothy Johnson Vaughan and other women employed as computers in the West Computing Group at Langley Research Center.

**Due Dates:**

- **Week 8 Online Discussion:** First post due Thursday 12 October; two additional posts due Sunday 15 October.
- **Week 8 Quiz:** Due Sunday 15 October.
### Week 9 | Module 9: Major Paper, First Draft (16–22 October)

**Learning Objectives:**

1. To produce a coherent first draft of your Major Paper: an essay that explores the life and work of a mathematician (or group of mathematicians) from an underrepresented group.

**Due Dates:**

- **Major Paper, First Draft:** Due Sunday 22 October.

### Week 10 | Module 10: Reading about Hidden Figures, Part II (23–29 October)

**Learning Objectives:**

1. To describe events in post-World War II America that led to increasing participation of African-American women mathematicians in the space program.
2. To describe the obstacles faced by African-American women mathematicians in the aerospace program during the 1950s, and the ways in which they overcame or worked around those obstacles.

**Due Dates:**

- **Week 10 Online Discussion:** First post due Thursday 26 October; two additional posts due Sunday 29 October.
- **Week 10 Quiz:** Due Sunday 29 October.
## Week 11 | Module 11: Hidden Figures: Book to Film (30 October–5 November)

**Learning Objectives:**

1. To explain how the development of NASA led to the professionalization of African-American women mathematicians.
2. To note similarities and differences between the book and the film version of *Hidden Figures* and to note both advantages and disadvantages of the film portrayal.

**Due Dates:**

- **Week 11 Online Discussion:** First post due Thursday 2 November; two additional posts due Sunday 5 November.
- **Week 11 Quiz:** Due Sunday 5 November.

**Learning Activities, Assignments, and Assessments:**

- **Watch** Marge's brief introductory lecture, *Hidden Figures: Book to Film*.
- **Watch** The 2016 film, *Hidden Figures*.
- **Discuss:** Participate in the Week 11 Online Discussion, *Hidden Figures: Book to Film*.
- **Take** the Week 11 Quiz, a brief assessment of what you've learned from this week's film and reading.

## Week 12 | Module 12: The Story of John Urschel, Part I (6–12 November)

**Learning Objectives:**

1. To trace the early experiences that led John Urschel to pursue his dual interest in mathematics and football.
2. To describe the ways in which Urschel's upbringing both defied and was shaped by common stereotypes about race, sports, and intellectual pursuits.
3. To submit a polished final draft of the Major Paper: an essay that explores the life and work of a mathematician (or group of mathematicians) from an underrepresented group.

**Due Dates:**

- **Week 12 Online Discussion:** First post due Thursday 9 November; two additional posts due Sunday 12 November.
- **Week 12 Quiz:** Due Sunday 12 November.
- **Major Paper, Final Draft:** Due Sunday 12 November.

**Learning Activities, Assignments, and Assessments:**

- **Watch** Marge's brief lectures, *Your Major Paper: Final Draft and John Urschel on Math & Football*.
- **Discuss:** Participate in the Week 12 Online Discussion, *John Urschel's Story, Part I*.
- **Take** the Week 12 Quiz, a brief assessment of what you've learned from this week's lecture and reading.
- **Submit** the Major Paper, Final Draft.
### Week 13 | Module 13: The Story of John Urschel, Part II (13–19 November)

**Learning Objectives:**
1. To critically examine stereotypes about African-Americans, sports, and mathematics.
2. To examine the ways in which false dichotomies may limit opportunities for underrepresented groups in the mathematical sciences.

**Due Dates:**
- **Week 13 Online Discussion:** First post due Thursday 16 November; two additional posts due Sunday 19 November.
- **Week 13 Quiz:** Due Sunday 19 November.

**Learning Activities, Assignments, and Assessments:**
- **Watch** Marge's interactive lecture, *Mind/Matter, Math/Football, and other Dichotomies.*
- **Discuss:** Participate in the Week 13 Online Discussion, *John Urschel's Story, Part II.*
- **Take** the Week 13 Quiz, a brief assessment of what you've learned from this week's lecture and reading.

### Thanksgiving Break (20–26 November)

### Week 14 | Module 14: LGBTQ Mathematicians—and Others (27 November–3 December)

**Learning Objectives:**
1. To describe the life and work of the mathematician Alan Turing.
2. To examine some of the historical obstacles faced by LGBTQ mathematicians.
3. To examine strengths and stereotypes associated with mathematicians on the autism spectrum.

**Due Dates:**
- **Week 14 Online Discussion:** First post due Thursday 30 November; two additional posts due Sunday 3 December.
- **Week 14 Quiz:** Due Sunday 3 December.

**Learning Activities, Assignments, and Assessments:**
- **Watch** Marge's interactive lecture, *Who was Alan Turing?*
- **Watch** the 2014 film, *The Imitation Game.*
- **Discuss:** Participate in the Week 14 Online Discussion, *Lessons from Turing.*
- **Take:** the Week 14 Quiz, a brief assessment of what you've learned from this week's film and reading.
Week 15 | Module 15: Inclusive Visions (4–10 December)

**Learning Objectives:**
1. To devise strategies for moving beyond stereotypes about mathematics and mathematicians.
2. To describe the significance of diverse role models for the mathematical sciences.
3. To convey to your classmates the significance of the mathematician (or group of mathematicians) you explored in your Major Paper.

**Due Dates:**
- **Week 15 Online Discussion:** First post due Wednesday 6 December; second post due Friday 8 December.

Week 16 | Module 16: Final Examination Week (11–15 December)

**Learning Objectives:**
1. To reflect, in writing, on the ways in which your mathematical attitudes have changed since you first wrote your Mathematical Autobiography in Week 1.

**Due Dates:**
- **Final Reflection:** Due Thursday 14 December.

**Learning Activities, Assignments, and Assessments:**
- **Watch** Marge's brief lecture, *Moving Beyond Stereotypes: Inclusive Visions*.
- **Discuss:** Participate in the Week 15 Online Discussion, *Inclusive Visions*.
- **Watch** Marge's brief lecture, *Your Final Reflection*.
- **Work on** the Final Reflection, due in Week 16.

**This Week:**
- You will submit your **Final Reflection**, a brief written account of what you have learned—both from the course material and from the process of developing the Major Paper—and how you might carry those lessons forward into the future.