UNIFORM FINAL EXAM INFORMATION

MATH 2423 — Spring 2020

Contents of this Packet

1 The Basics

Exam Window: Opens Wednesday, 6 May, at noon (12 p.m.), Central Time; Closes Thursday, 7 May, at 11:59 p.m., Central Time; Times listed in this packet are given in Central Time, that is, the time that it will be in Norman, Oklahoma.

How Long You'll Have to Work on the Exam Once Started:

Working on the exam	2 hours
Uploading written work; technology troubleshooting	0.5 hours
TOTAL	2.5 hours

Where: In your own home, in a place that is as quiet as possible and as free from distractions as possible. (This is important. If you live with other people, you should let them know when you'll be testing and ask that they do not disturb you during that time.)

What You Will Need: (Read this list carefully.)

- A good pencil or a pen (If you don't write dark enough, we may be unable to grade your work.)
- Paper
  - We recommend that you use blank white printer paper, if you have it. If you must use lined paper, try to use some that has very faint lines. Dark lines will make your work hard to read when uploaded.
  - You should write on only one side of each piece of paper you use. Writing on both sides could make it very hard to see your work when you upload it. (The work on the other side may show through and make it hard to read.)

2 Integrity Statement

Cheating is strictly prohibited at the University of Oklahoma.

Cheating devalues the degree you are working hard to get and destroys the trust between instructor and students. As a member of the OU community it is your responsibility to protect your educational investment by knowing and following the rules. For specific definitions on what constitutes cheating, review the Student's Guide to Academic Integrity, which can be found online at http://www.ou.edu/integrity/students.

- **All work on this exam must be your own.** You may not receive help from any other person while taking this exam. Each of the following actions violates the OU Integrity Code and will be considered cheating: (1) discussing the exam with any other person, (2) receiving information about the exam from any other person, or (3) giving information about the exam to any other person.
- **You are not allowed share exam information with anyone.**
- **You are allowed to use the course textbook and *your* class notes.** If you do not have the textbook with you, then you may be able to access the most recent chapters through your Canvas course by clicking the Course Materials link. We have set this up for you as a courtesy. If you don't have the textbook and if you have trouble accessing it via Canvas, then you must complete the exam without it.
- **You are not allowed to get help from the internet while taking this exam.** You may access Gradescope while taking the exam, and you may access the textbook if you do not have a physical version of it with you. All other internet resources are forbidden.
- **You are not allowed to use a calculator while taking this exam.** This includes online calculators and graphing devices.
- **If you become aware that another student is planning to cheat, is cheating, or has cheated on the exam, please report it.** You may report cheating to your instructor or directly to the Office of Academic Integrity by emailing integrity@ou.edu. The more detail you can give, the better. Remember! THEIR cheating decreases the value of YOUR degree!

Violating the OU Integrity Code can result in severe penalties, such as expulsion from the University and an F in the course. DON'T CHEAT! It is not worth it.

3 How to Take the Exam

3.1 The Platform (Gradescope)

To get to the exam, go to the homepage of your Canvas course for MATH 2423. On the left-hand side, you should see a navigation link that says Gradescope. Click that. This will take you to the Gradescope course that houses the exam. If your instructor has given you different instructions for accessing Gradescope, then please follow those instructions instead. When you go to the Gradescope site on the day of the exam (when it opens on Wednesday at noon), you will see MATH 2423 Uniform Final Exam listed there. You'll need to click on that to take your exam.

You can access Gradescope on any device. You should be able to do it on a desktop computer or a laptop computer (the best way to do it), a tablet, or a smartphone. Be aware that wired internet connections are far more stable than wireless connections. If you can manage a wired connection, you will probably have fewer issues. There is more information below about what to do if things go wrong.

3.2 The Testing Window and Time Limit

The testing window will open on Wednesday, 6 May, at noon (12 p.m.), and it will close on Thursday, 7 May, at 11:59 p.m. You must complete the exam during this time. You will not be allowed to continue your exam after 11:59 p.m. on the 7th, even if you still have time on your testing clock then.

Once you open the exam, you will have 2.5 hours to complete it. You should think of that as 2 hours to take the exam (the standard final exam length) and 30 minutes to upload your work and to deal with any tech issues that might come up. All work that you want graded must be submitted within those 2.5 hours. Don't hold off on uploading work and then let your time run out. You won't receive credit for that work if it isn't submitted within the 2.5-hour time limit. We recommend uploading a file for a problem before moving on to the next problem. (Not all problems will require file uploads, but many will.) Don't wait until the end to upload everything! Upload as you go.

3.3 The Questions

There could be questions of the following types: multiple choice, true/false, multi-select, short answer. These types of questions can be auto-graded on Gradescope, and you won't need to upload anything to answer these. There definitely will be several free response questions. These will be graded by your instructor, and there will be the opportunity for partial credit. You will have to upload your written work to Gradescope for each free response question.

3.4 How to Upload Written Work

Many (but not all) of the questions on the exam will require you to upload a file containing your written work to Gradescope.

We recommend that you use a scanner app on your smartphone to turn your written work into a black-and-white PDF file that you can upload. This is the best for the instructors who will be grading your exam. We have found that this way of doing it produces the best, most readable results, most of the time. There are many scanner apps available in the app store on your device. Some are free and some are not free. Students have recommended CamScanner, Scannable, and Camscan.

You can also take photographs of your work and upload those photos directly to Gradescope. This is fine as long as your work is clear, readable, well-framed, isn't obscured by a glare from the flash. (In fact, if you do it with photos, we recommend having the mode set to black and white and the flash OFF.)

Regardless of the method you use, you will upload work for each problem individually, when you get to that problem on the exam. You should try hard to fit your work for each problem on a single sheet of paper. Only write on one side of the paper. Write clearly and darkly. Make sure that your scan or photo of the page is nicely cropped, right-side up, and easy to read. If you mess up a lot, start over on a new sheet of paper.

Practice scanning your work and saving it in an acceptable file format BEFORE the Final Exam! You will not be given extra time to submit your work, and you will want to sort out any glitches before you take the exam.

3.5 Upload Problems for iPhone Users; Info on Accepted File Types

There are issues with the default file type that certain iPhones use when you take photos. On newer iPhone models, the default is that it stores those photos in HEIC format. However, this file type is not accepted by Gradescope.

Gradescope is very flexible generally, though it doesn't accept HEIC files. It accepts PNG, TIFF, PDF, and JPEG. These are very standard file formats. If you take a photo using an iPhone, then you will need to use some sort of software or some other technique to change the file type to one of the accepted types. You may have to look up on the internet how to do this. OR YOU COULD USE A FREE SCANNER APP. THIS IS MUCH BETTER AND MUCH EASIER! Camscanner has been recommended again and again by students. There are other free scanner apps for your iPhone, too, though you'll have to do your own research on that. If we can't view your work because it is in a wrong file format, then we won't be able to grade it.

Again, a PDF file is always going to be accepted, and most scanner apps (even the free ones) have the option of saving the file as a PDF. For some scanner apps that is the default.

RECOMMENDATION: Save all photos and/or scans of your work until at least two weeks after the semester ends, just to be on the safe side. If your instructor has issues grading your work, they'll be in touch, and you'll want to have all of your scans readily accessible. Make sure those photos and/or scans have time stamps on them.

3.6 What to do if things go wrong...

You can avoid many potential issues if you will practice scanning/photographing your work ahead of time. If you have had any trouble in the past uploading files to Gradescope, then please meet with your instructor before the final exam. You need to be able to upload files correctly for the final exam.

If your internet cuts out while you are taking the test, try to log back on as quickly as possible. Your time will not pause if you get kicked off. If your internet is down for an extended period of time, then you will need to contact your instructor IMMEDIATELY via email. If they are unable to get back to you immediately, don't panic. They will get back to you as soon as they possibly can, and they will work with you to sort out the issue in a way that is fair and based on your level of effort (and your ability to follow instructions).

If you have trouble submitting the files of your written work on the free-response questions, then you may email those files directly to your instructor. However, you should only do this as a last resort. This probably won't happen to you. If you have trouble submitting your work during the exam and need to email the work to your instructor, be sure to send the email right away. Your email must be received during the 2.5 hours in which you are taking the exam.

4 Exam Content

The exam questions will focus on the following topics:

- **INTEGRALS—Conceptual Knowledge**
  - Limit definition of the definite integral
  - Properties of integrals (pgs. 313-315)
  - Accumulation functions and the Fundamental Theorem of Calculus (Part 1)
  - Fundamental Theorem of Calculus (Part 2)
  - Relationship between integral and area
  - Defining improper integrals in terms of a limit of definite integrals

- **INTEGRALS—Procedural Knowledge**
  - Computing Riemann sums
  - Computing an integral by interpreting in terms of area
  - Computing indefinite integrals (basic antiderivatives)
  - Evaluating definite integrals using FTC Part 2
  - Applying various techniques of integration (and knowing which to apply to a given problem)
    - Algebraic/trigonometric manipulation (rewriting the integrand in some way before integrating)
    - Substitution

    * Integration by parts
    * Standard trig integral forms
    * Trigonometric substitution
    * Partial fractions decomposition

- **INTEGRALS—Applications**
  - Displacement versus distance
  - Areas between curves
  - Volumes
  - Average value of a function
  - Improper integrals

- **INVERSE FUNCTIONS**
  - Finding the inverse of a one-to-one function
  - Exponential and logarithmic functions and their basic properties
  - Derivatives and integrals of exponential and logarithmic functions
  - Antiderivative of $f(x) = \dfrac{1}{x}$
  - Logarithmic differentiation
  - Domain and range of arcsine, arccosine, and arctangent
  - Derivatives and integrals involving inverse trig functions

- **INDETERMINATE-FORM LIMITS**
  - Recognizing indeterminate forms (quotients, products, differences, powers)
  - L'Hospital's Rule

The topics listed above are covered in the following sections of the textbook: §4.1-4.5; §5.1-5.3, 5.5; §6.1-6.4, 6.6, 6.8; §7.1-7.5, 7.8. You are responsible for knowing the content covered in these sections. Your instructor may have covered Sections 6.2*-6.4*, instead of Sections 6.2-6.4. That is fine, since the starred sections and the non-starred sections cover the same material, just in a different order.

The following topics will not be included on this semester's uniform final exam:

- Work (Section 5.4 of the textbook)
- Exponential growth and decay (Section 6.5 of the textbook)
- Hyperbolic functions (Section 6.7 of the textbook)
- Approximate integration (Section 7.7 of the textbook)
- Arc length (Section 8.1 of the textbook)

5 MATH 2423 Midterm Exam Packet

The uniform exam will be written by all of the MATH 2423 instructors. For this reason, you will be given access to this semester's midterm exams from the other sections of the course. Your instructor will make these available to you (via Canvas, via email, or another way). These extra exams should give you a sense of the other instructors' exam styles and should provide you with a lot of practice problems.

6 How to Prepare for the Exam

Your instructor has already provided you with dozens of excellent problems that you can use as you study for the final exam. They've given you problems on exams that you should be sure you know how to do, and they've given you homework and other practice problems. You also will have the MATH 2423 Midterm Exam Packet (mentioned just above) to use for practice.

This is *your* time to study and prepare. Make a plan! The final exam is comprehensive (with the exception of a few small topics, which were listed earlier in this packet). To succeed, you will need to be able to synthesize an entire semester's worth of content. You need to be proficient in the procedural skills taught this semester (such as computing integrals using various techniques, evaluating limits, finding volumes, etc.), and you need to have robust knowledge of the key concepts (the main one being the major theme throughout the semester of taking a certain object or problem and breaking it into small pieces and then using more and more pieces to better approximate and finally using a limit to define the actual value...woo! It is a mouthful!).

7 ADRC Testing

If you are approved for exam accommodations through the ADRC, then you may typically get extended time on your exams. The ADRC will let your instructor know how much time you are supposed to receive, and you will still receive that amount of time to take your exam on Gradescope. You must take your exam during the testing window mentioned previously in this packet. You will not be given any additional time to test after Thursday, 7 May, at 11:59 p.m., even if you have time remaining on your testing clock when that deadline is reached. So, be sure to factor in plenty of time in which to take your test. You are responsible for starting your exam early enough that you get to use your full time before the 11:59 p.m. Thursday deadline.

8 Makeup Exams

If you believe that you have a valid reason why you cannot take your exam at any point during the set testing window, please email the course coordinator (Dr. Rachel Wright) directly, at rachelwright@ou.edu, to explain your situation. Since the testing window is 36 hours hours long, there really should not be any reason why you can't find a time to take the exam. Makeup-request emails must be received by Dr. Wright by 5 p.m. on Friday, 1 May. She makes all the decisions concerning makeup exams, in accordance with University policy.

9 Academic Integrity

All students should be familiar with the University's policies regarding Academic Integrity. Visit http://integrity.ou.edu/students.html for more information. Cheating of any sort will not be tolerated. Students suspected of cheating will be prosecuted to the full extent allowed by the University. Consequences for such offenses can include expulsion from the University. You are expected to be aware of all Academic Integrity policies, and you are expected to adhere to the rules and guidelines outlined in the Integrity Statement (on page 2 of this packet). It is your responsibility to understand which behaviors constitute a violation of the Academic Integrity Code.

If you know of another student who is planning to cheat, is cheating, or did cheat on the exam, please contact your instructor and also email the Office of Academic Integrity at integrity@ou.edu. THEIR cheating decreases the value of YOUR degree!

Also, what kind of person do you want to be? A cheater who always takes the easy way out? Or a person of character who does the right thing, even if it is difficult? You won't forget what choice you made here.