

(2020-05-06-0003)

NORTH CAROLINA STATE UNIVERSITY
Department of Mathematics
MA 241: Distance Education

To: MA 241-651 Students, 10-Week Summer Session 2020
From: Dr. John Griggs (<https://jrgriggs.wordpress.ncsu.edu>) (jrgriggs@ncsu.edu)

Welcome to MA 241! I sincerely hope you have a positive learning experience using the taped lectures. I trust that you will contact me when you need my help. The two ways to reach me are through my email (jrgriggs@ncsu.edu), or by phone (personal cell: 919-608-9726). Please **identify yourself as a MA 241 distance education student**. If you are asking a question about a specific problem, clearly identify the problem/section and type out all your steps (or send a picture) so I can try to help you find your mistake, if there is one. Teaching assistant **Catie Acitelli** (cbacitel@ncsu.edu) will also be available for your questions. If you have mediasite problems, please notify DELTA Support Services (515-9030).

The videos were taped during the most recent Spring 2016 semester in a 15-week session in a studio classroom. The textbook for this course is *Calculus II for Engineers and Scientists* by Franke, Griggs and Norris. It is an e-book and is housed on WebAssign under RESOURCES. You will pay one fee that covers both the WebAssign homework and the e-book. We have been working hard on this book for more than four years; please read it and study the examples.

Testing situations have changed drastically in this era of quarantining and social distancing. If you are home for the summer living with your parents, then one of your parents can serve as your remote test proctor. You will need to text me a picture of your proctor holding up the proctor forms before you take the test. If your personal situation is different from this, you and I will need to have a discussion of who can serve as your responsible test proctor. If testing centers resume operation, then I will want you to use these sites for test taking.

Final average: **60% Test Average;** **30% Final Exam;** **10% Webassign Homework**

A “built-in” curve for all students is to have your worst test count half as much as the other two tests. It will not be replaced, but will hopefully “hurt you less” by only counting it once while the other two tests are counted twice in determining your test average.

TEST DATES:

Test 1: Wednesday, June 3
Test 2: Thursday, June 25
Test 3: Monday, July 20
Final Exam: Monday, July 27

Homework will be delivered/submitted over the web using Webassign: <http://webassign.ncsu.edu>
Please contact me when you need my help. The answers to selected exercises are in the back of the book. I have tried to work a lot of varied problems in class. Please note the “communication” of the step-by-step process. Your work on your tests communicates your mathematical understanding of the concepts. Take good class notes. Work additional problems from each section; WebAssign alone is not enough to prepare for excellence.

NORTH CAROLINA STATE UNIVERSITY
Department of Mathematics
MA 241 – 651
10-Week Summer Session 2020

PACING GUIDE

Wednesday, May 13 through Tuesday, June 2:

Textbook coverage: Chapter 0 - all; Chapter 1 – all; Chapter 2 (2.1, 2.2)
(lecture #1 – lecture #19)

Test #1: Wednesday, June 3

Thursday, June 4 through Wednesday, June 24:

Textbook coverage: Chapter 2 (2.3, 2.4, 2.5, 2.6); Chapter 3 (3.1, 3.2, 3.3)
(lecture #19 – lecture #36)

Test #2: Thursday, June 25

Friday, June 26 through Friday, July 17:

Textbook coverage: Chapter 3 (3.4, 3.5, 3.6); Chapter 4 (4.1, 4.2, 4.3, 4.4, 4.5)
(lecture #37 – lecture #54)

Test #3: Monday, July 20

Tuesday, July 21 through Friday, July 24:

Textbook coverage: Chapter 4 (4.6, 4.7, 4.8, 4.9)
(lecture #55 – lecture #64; final exam covers all lectures #1 - #64)

Comprehensive Final Exam: Monday, July 27 (grades posted by July 30)

Math WebAssign Student Help Sheet

1. Log In

You can do these assignments on any computer provided that you have Internet Access with Netscape Navigator 4.0 or higher or Internet Explorer 5.0 or higher. If you are doing this from home, go to step 3. If you have logged into the campus system before, then your login ID and password is the same as before. If this is your first time logging in, then your login ID is generally the first letter of your first name, 1st letter of your middle name and the first 6 letters of your last name unless you have been told otherwise. If your name was John Michael Doe, your login ID would be *jmdoe*. Do not use spaces or upper case letters in your login ID or password. Your password is your student ID # (no dashes).

If you have any problems logging in to UNIX, see the lab consultant in HA 244 or if a consultant is not available, call a consultant at the Hillsborough Building at 515-3035. They can answer questions regarding your login ID and your password ONLY.

2. Open Netscape or Internet Explorer

If you are using the NSCU UNIX system, click on your middle mouse button to pull up a menu called "Application Menu". Choose "Netscape Web Browsers" and wait for it to load. If a gray window pops up with the options "Accept" or "Do not accept", choose "Accept". If you are at home, you will need an internet connection. If you have one, you can use either Netscape or Internet Explorer.

3. Start your Assignment

In your Internet browser, there is a box at the top labeled "Net Site" or "Address". Inside that box type:

<http://webassign.ncsu.edu>

Click on the link Continue Login, this will bring up a prompt to type in your login ID and your password. This will bring you to the Assignments Summary page. Begin your assignments by clicking on the name of your assignment. Type in your answers and click the submit button at the bottom of the page. If you get a red X next to an answer that means it is wrong. You can change the answer and re-submit anytime before the due date.

4. Log Out

After you finish your assignments, remember to close your web browser (Netscape/Explorer). If you are on a UNIX computer, type *logout* in the brown window labeled "xterm".

If you need help, come to the Math Multimedia Center in SAS Hall 2105. Tutors and Video taped courses are available. The phone number is 515-3157.




MA241 Recorded Lectures: (from Spring 2016)

- 1.) Course Introduction; Chapter 0 (Limits)
- 2.) Chapter 0 (Continuity; Derivatives)
- 3.) Chapter 0 (Derivatives of trig, e^x ; Increasing/decreasing)
- 4.) Chapter 0 (Antiderivatives; Areas; Volumes; Subst; By Parts)
Chapter 1 (Begin 1.1: Arc Length)
- 5.) Chapter 1 (1.1: Arc Length)
- 6.) Chapter 1 (1.1: Arc Length; 1.2: Average Value of a Function)
- 7.) Chapter 1 (1.2: Average Value of a Function)
- 8.) Chapter 1 (1.3: Work: Spring)
- 9.) Chapter 1 (1.3: Work: Move "Slices")
- 10.) Chapter 1 (1.3: Force Due to Hydrostatic Pressure)
- 11.) Chapter 1 (1.3: Force Due to Hydrostatic Pressure)
- 12.) Chapter 1 (1.3: Moments and Centers of Mass)
- 13.) Chapter 1 (1.3: Centers of Mass)
- 14.) Review for Test #1
- 15.) Chapter 2 (2.1: Trigonometric Integrals: Powers of sin/cos)
- 16.) Chapter 2 (2.1: Trigonometric Integrals: Powers of sec/tan)
- 17.) Chapter 2 (2.2: Trigonometric Substitution)
- 18.) Chapter 2 (2.2: Trigonometric Substitution)
- 19.) Chapter 2 (2.2: Trigonometric Substitution: Completing the
Square; 2.3: Partial Fractions: Linear Factors)
- 20.) Chapter 2 (2.3: Partial Fractions: Repeated Linear Factors,
Irreducible Quadratic Factors)
- 21.) Chapter 2 (2.3: Partial Fractions: Divide First; Repeated
Quadratic Factors)
- 22.) Chapter 2 (2.4: Table of Integrals)
- 23.) Chapter 2 (2.5: Numerical Integration: Trapezoidal Rule)
- 24.) Chapter 2 (2.5: Numerical Integration: Trapezoidal Error,
Begin Simpson's Rule)
- 25.) Chapter 2 (2.5: Numerical Integration: Simpson's Rule,
Error)
- 26.) Chapter 2 (2.6: Improper Integrals: Infinite Limits)
- 27.) Chapter 2 (2.6: Improper Integrals: Vertical Asymptotes)
- 28.) Chapter 2 (2.6: Improper Integrals); Chapter 3 (3.1:
Differential Equations: Intro and Verify Solutions)
- 29.) Chapter 3 (3.1: Euler's Method); Review for Test #2
- 30.) Chapter 3 (3.1: Slope Fields)



- 31.) Chapter 3 (3.2: Separable Differential Equations)
- 32.) Chapter 3 (3.2: Orthogonal Trajectories)
- 33.) Chapter 3 (3.3: Tank Problems)
- 34.) Chapter 3 (3.3: Growth and Decay)
- 35.) Chapter 3 (3.3: Newton's Law of Cooling; Logistic Growth)
- 36.) Chapter 3 (3.3: Logistic Growth)
- 37.) Chapter 3 (3.4: Second Order DEs: Homogeneous: 2 Real Roots)
- 38.) Chapter 3 (3.4: Second Order DEs: Homogeneous: Double Root)
- 39.) Chapter 3 (3.4: Second Order DEs: Homogeneous: Complex Roots)
- 40.) Chapter 3 (3.5: Second Order DEs: Nonhomogeneous: Exponential; Polynomial)
- 41.) Chapter 3 (3.5: Second Order DEs: Nonhomogeneous: Sin/Cos)
- 42.) Chapter 3 (3.5: Second Order DEs: Nonhomogeneous: Products and Sums)
- 43.) Chapter 3 (3.6: Second Order DEs: Applications: Circuits)
- 44.) Chapter 3 (3.6: Second Order DEs: Applications: Vibrations); Review for Test #3
- 45.) Chapter 4 (4.1: Sequences)
- 46.) Chapter 4 (4.2: Series: Infinite Geometric Series)
- 47.) Chapter 4 (4.2: Series)
- 48.) Chapter 4 (4.2: Series: Telescoping; Harmonic)
- 49.) Chapter 4 (4.2: Series: Test for Divergence; 4.3: Convergence Tests: Integral Test)
- 50.) Chapter 4 (4.3: Convergence Tests: p-Series)
- 51.) Chapter 4 (4.3: Convergence Tests: Comparison Test; Limit Comparison Test)
- 52.) Chapter 4 (4.3: Convergence Tests: Estimation of the Sum; 4.4: Alternating Series)
- 53.) Chapter 4 (4.4: Alternating Series: Alternating Series Estimation Theorem)
- 54.) Chapter 4 (4.5: Absolute Convergence; Conditional Convergence)
- 55.) Chapter 4 (4.6: Power Series: Ratio Test: Interval of Convergence)



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- 56.) Chapter 4 (4.6: Power Series: Ratio Test: Interval of Convergence; 4.7: Functions as Power Series)
- 57.) Chapter 4 (4.7: Functions as Power Series)
- 58.) Chapter 4 (4.8: Taylor Series; Maclaurin Series)
- 59.) Chapter 4 (4.8: Taylor Series; Maclaurin Series: e^x , $\sin x$)
- 60.) Chapter 4 (4.8: Taylor Series; Maclaurin Series: $\cos x$, Derivatives of Taylor Series); Review for Test #4
- 61.) Chapter 4 (4.8: Binomial Series)
- 62.) Chapter 4 (4.8: Algebra of Power Series)
- 63.) Chapter 4 (4.9: Taylor and Maclaurin Polynomials: Error; Examples from Physics)
- 64.) Chapter 4 (4.9: Taylor and Maclaurin Polynomials: Examples from Physics); Review for Final Exam

