

University of North Georgia
College of Science and Mathematics
Mathematics Department
Mathematics 1111, College Algebra CRN 6984

Meeting Time: 11:00 am – 11:50am MWF; **Room:** O. Class 314
Semester: Spring (2015)
Instructor: Berhanu Kidane
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Office Hours: MW **9:00 – 9:50 am**
TR **9:00 – 11:10 am**
Fri **12:00 – 02:00 pm:** Room 320 (Math Gym)

Important Dates:

1. Course changes and late registration: Drop/Add: Jan 5 – 9
2. Full Session withdrawal dead line Feb 27
Dropping a course after this date means an automatic "WF" unless the Dean gives specific approval. Prior to this date, a "W" will be awarded.
3. Holiday Jan 19 (no Class):
4. Break Mar 16 - 21(no classes)
5. Class end: Apr 24; Final Exams (Apr 27 - May 1)
6. **Final Exam: Monday April 27**

Text and Other Materials are available free online for students:

1. **Online Educational Resources (OER)** from Affordable Learning Georgia (ALG: <http://www.affordablelearninggeorgia.org/>) and other online resources:

Text Books, e – books, students can download a free pdf copy:

- <http://www.stitz-zeager.com/szca07042013.pdf>
- <http://msenux.redwoods.edu/IntAlgText/> (Chapters 3 – 9)

Tutorials and Practice Exercises

- http://www.wtamu.edu/academic/anns/mps/math/mathlab/col_algebra/index.htm
- <http://www.ixl.com/math/algebra-2>
- <http://www.ixl.com/math/prec calculus>
- <http://www.ltcconline.net/greenl/java/index.html>

2. SUPPLEMENTARY MATERIALS:

i. **Library Resources:**

- Mathematics Teacher, NCTM, Reston, VA.
- Schaum's easy outlines. *College algebra* : based on Schaum's Outline of *college algebra* by Murray R. Spiegel and Robert E. Moyer [computer file] / abridgement editor, George J. Hademenos
- Bell, E. T. Men of Mathematics. New York: Simon & Schuster, 1937.
- Osen, Lynn. Women in Mathematics. Cambridge MA, MIT Press, 1974.

ii. **Technology Resources:**

- Desmos Graphic Calculator at <https://www.desmos.com/calculator>
- Graphing calculator, Calculator-Based Laboratory (CBL), Calculator-Based Ranger (CBR)

iii. **Optional Books:** Any college Algebra or pre-calculus book of **any edition** whose contents overlap the contents on page 3 of this syllabus can serve as a reference for this course. For Example: College Algebra by John Colburn; College Algebra by Michael Sullivan; College Algebra by Margaret Lial and John Hornsby; College Algebra by James Stewart and Lothar Redlin; College Algebra by Robert Blitzer etc.

iv. **Web-based Resources:**

- Purplemath.com at: <http://www.purplemath.com>
- Khan academy at: <http://www.khanacademy.org>
- **Google** at: <http://www.google.com> Google any topic (**For example:** Google Square root of 2 or pi or any topic)
- You tube at: <http://www.youtube.com> (**For example:** write “linear equations” in the YouTube.com browser bar)
- Project Interactive - <http://www.shodor.org/interactivate>
- Association for Women in Mathematics – <http://www.awm-math.org>
- The Math Forum - <http://mathforum.org/>
- Texas Instruments - <http://education.ti.com/educationportal>
- Eric Weisstein’s World of Mathematics (Encyclopedia of Mathematics) - <http://mathworld.wolfram.com>
- Math Nerds – <http://www.mathnerds.com/mathnerds>
- SOS Mathematics – <http://www.sosmath.com>
- Multi cultural Pavillon - <http://www.edchange.org/multicultural>
- Women in Mathematics - <http://www.agnesscott.edu/riddle/women/women.htm>
- Careers in Mathematics - <http://www.ams.org/early-careers/>

3. **COURSE DESCRIPTION:**

Topics include algebraic and absolute value equations and inequalities; piece-wise defined, polynomial, rational, exponential and logarithmic functions with their graphs and applications; and systems of equations. This course is designed to prepare students for MATH 1113 or MATH 2040. Students in majors that do **not** require these courses are encouraged to take MATH 1001 or MATH 1101.

Credit: 3 hours. **Prerequisite:** Regular placement or successful completion of MATH 0099.

Co-requisite: READ 0099, unless exempt

4. **COURSE OBJECTIVES:**

After completion of the course the student will be:

- Prepared for further work in mathematics.
- Able to Represent and solve real-world problems and applications of mathematics.
- Exposed to technology that enhances understanding of mathematics.
- Able to apply the distance and midpoint formulas.
- Able to graph and find the equation of a circle in standard form.
- Able to apply a variety of problem solving strategies including algebraic, numerical, and graphical techniques to analyze and/or solve piece- wise defined, polynomial, rational, and absolute value equations and inequalities.
- Able to apply function concepts and notation including function composition and inverse function.
- Able to set up and solve variation problems.
- Able to identify polynomial functions and perform sums, products, and quotients of polynomials (including the Remainder and Factor Theorems.)
- Able to identify rational functions, find the domain of a rational function, find asymptotes and sketch graphs
- Able to apply a variety of problem solving strategies including algebraic, numerical, and graphical techniques to solve exponential and logarithmic functions.
- Able to solve and classify systems of linear equations.

5. **General outline for course coverage** based on the 50 minute class duration.

- Equations, Inequalities and Variation: 8 days
- Coordinates and Graphs: 4 days
- General Functions: 7 days
- Polynomial and Rational Functions: 7 days
- Exponential and Logarithmic functions: 7 days
- Systems of Equations: 3 days

6. COURSE CONTENTS AND COVERAGE

	Dates	No of Weeks
Chapter 1: Sets and The Real Number System (P. 1 – 17)		
1.1.0. Sets		1
1.1.1. Review on the Real Number System		
1.1.2. The Coordinate and Graphs		2&1/2
1.1.3. The Coordinate Plane and Graphs		
2.4. Solving Equations and Inequalities (P. 208)		
1.2 – 1.7. Relations, Functions and Their Graphs (P. 20 – 144)		3&1/2
1.2. Relations		
1.3. – 1.7. Functions and Properties, Basic Functions;		
Getting Information from Graphs		
Average and Instantaneous Rate		
Graphing Techniques: Transformations		
Chapter 5. Further Topics on Functions (P. 359 – 411)		
5.1 Combining Functions		
5.2 One to one Functions and Their Inverses		
Chapter 2& 3. Polynomial and Rational Functions (P. 151 – 297)		4
2.1. – 2.2. Linear, Quadratic Functions and Models (P. 151 – 203)		
3.1. – 3.4. Polynomial Functions and Their Graphs (P. 235 – 297)		
Dividing Polynomials		
Real Zeros of Polynomials		
Complex Zeros of Polynomials		
Chapter 4. Rational Functions (P. 301 – 353)		
4.1 – 4.3. Rational Functions and Graphs		
Chapter 6. Exponential and Logarithmic Functions (P. 417 – 490)		2
6.1. – 6.3. Exponential Function		
6.2. – 6.4. logarithmic Functions and Laws		
Chapter 8. Systems of Equations and Inequalities (P 549 – 566)		1
8.1. System of Linear Equations in Two variables		
System of Linear Equations in Several Variables		

7. METHODS

- i. **Methods of Instruction:** The methods of instruction are determined by the instructor; however, the instructor is encouraged to use a variety of methods. These methods may include, but are not limited to lecture; problem-solving sessions with informal assessment by the student or instructor; discussion; group projects; timely feedback from test, quiz, or project results (formative assessment); question and answer; computer or calculator based explorations; and student presentations. Students will be encouraged to assess and monitor their own problem-solving process to determine when an error has been made or a new strategy should be used.
- ii. **Evaluation Methods:** Formative assessment will be in the form of written tests and/or short quizzes and summative assessment will be in the form of a final examination. Special projects and daily grades may be used at the discretion of the instructor. Final grades are determined by the percentage as follows:
90 – 100 = A, 80 - 89 = B, 70 – 79 = C, 60 – 69 = D and below 60 = F. (Although a grade of "D" is passing, you must have a "C" or better in MATH 1111 to take any course for which MATH 1111 is a prerequisite.)

8. OTHERS:

- **Tests and other assignments:** In class or Take-Home Quizzes (Homework), Four Exams/Tests (of the Four one with the least grade will be dropped)
- **Final:** The final is comprehensive, covers everything discussed during the semester
- **Make-up Information:** Generally Make-ups are not allowed for missed Tests; however, if a student provides an acceptable authorized documentation for the absence, the student might be allowed to make up for the missed work. No make-up for homework and no make ups for missed classes.
- **Attendance Policy:** The attendance policy is concurrent with UNG's attendance policy. Attendance will be taken each class.
- **Student Grade Calculator:** An excel spread sheet **student grade calculate** will be posted in the **shared class files**. Students are responsible for calculating their up to date grades using the grade calculator.

9. FINAL GRADES:

Final grades will be determined as follows:

Homework and Quiz:	30 pts.	
Exam/Test One:	15 pts.	(Jan 30)
Exam/Test Two:	15 pts.	(Feb 20)
Exam/Test Three:	15pts.	(Mar 13)
Exam/Test Four:	15 pts.	(Apr 17)
Final Exam:	25 pts.	(Monday April 27 from 10:20 am – 12:20 pm)
Total:	100	

- ❖ *The instructor reserves the right to alter the syllabus, in whole or in part, in order to meet the needs of all the students*

SUPPLEMENTARY SYLLABUS

Students are expected to refer to the Supplemental Syllabus, given below, for other detailed instructions which include in addition to disability services, the following:

1. **Academic Exchange**
2. **Academic Integrity Policy**
3. **Academic Success Plan Program**
4. **Class Evaluations**
5. **Course Grades and Withdrawal Process**
6. **Disruptive Behavior Policy**
7. **Inclement Weather**
8. **Smoking Policy**
9. **Students with Disabilities**

ACADEMIC SUCCESS PLAN PROGRAM

UNG has implemented an Academic Success Plan Program to identify and provide assistance to at-risk students. Refer you to your campus Academic Advising Center for the development of strategies that will enhance your academic success. You will be expected to take advantage of advising and other campus resources to achieve your academic goals.

STUDENTS WITH DISABILITIES

University of North Georgia is committed to equal access to its programs, services, and activities, and welcomes otherwise qualified students with disabilities. Students who require accommodations and services must register with Disability Services and submit supporting documentation. Disability Services provides accommodation memos for eligible students to give to their instructors. Students are responsible for making arrangements with instructors, and must give reasonable prior notice of the need for accommodation.

Contact Information for Disability Services:

- Gainesville Campus: Carolyn Swindle, Assistant Director, carolyn.swindle@ung.edu, Dunlap-Mathis Building, Room 107, 678-717-3855
- Dahlonega Campus: Thomas McCoy, Assistant Director, thomas.mccoy@ung.edu, Stewart Student Success Center, Room 313, 706-867-2782.
- Oconee Campus: Erin Williams, Assistant Director, erin.williams@ung.edu, Administration Building, Room 112, 706-310-6202.
- Cumming Instructional Site: Nicola Dovey, Director nicola.dovey@ung.edu or Beth Bellamy, Test Facilitator, beth.bellamy@ung.edu 678-717-3855. (For on-site assistance, contact Rebecca Rose, Head Librarian, rebecca.rose@ung.edu, Library University Center 400, 470239-3119.

ACADEMIC INTEGRITY POLICY

Student Code of Conduct: Please review the Student Code of Conduct found here: <http://ung.edu/student-affairs/student-code-of-conduct.php>

Plagiarism and Turnitin.com: Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Terms and Conditions of Use posted on the Turnitin.com site.

Copyright: Both Federal and State laws forbid the unlawful duplication of copyrighted computer software or other reproductions of copyrighted material. In accordance with these policies, University of North Georgia expressly forbids the copying of such materials supplied by or used in the College. Unlawful duplication of copyrighted materials by a user may result in disciplinary action by the College under the Student Code of Conduct (Non-Academic Infractions--Prohibitions, Theft), and/or possible criminal action by the owner of the copyright.

DISRUPTIVE BEHAVIOR POLICY

Students who exhibit behaviors that are considered to obstruct or disrupt the class or its learning activities are subject to sanctions under the Board of Regents Policy on Disruptive Behavior. Behaviors which may be considered to be inappropriate in this classroom includes, but is not limited to, sleeping, coming in late, talking out of turn, inappropriate use of laptops or mobile devices, verbal behavior that is disrespectful of other students or the faculty member, or other behaviors that may be disruptive. Students who exhibit such behavior may be temporarily dismissed from the class by the instructor and will be subject to disciplinary procedures outlined in the Student Handbook.

CLASS EVALUATIONS

Class evaluations at UNG are conducted online. Evaluation of the class is considered a component of the course and students will not be permitted to access their course grade until the evaluation has been completed. The evaluations will be accessible beginning one week prior to Final Exam week.

ACADEMIC EXCHANGE

Universities welcome diversity, free speech and the free exchange of ideas. Discussion should be held in an environment characterized by openness, tolerance of differences and civility. The values of an intellectual community are trust, honesty, free inquiry, open debate, respect for diversity, and respect for others' convictions. Further, the intellectual community always seeks to foster the virtues and characteristics of intelligence, curiosity, discipline, creativity, integrity, clear expression, and the desire to learn from others. It is these that must guide our work and exchanges in this class. These principles are delineated further in the [ACE Statement on Academic Rights and Responsibilities](#).

If these values and principles are breached, students have the right and responsibility to discuss their concerns with the course instructor and, as needed, the department head. Usually, the concerns are addressed at this level, but sometimes the department head may refer students to another resource. In the event that either the student or the instructor is not satisfied after discussion with each other, he/she may take his/her concerns in writing to the Associate Provost for Academic Administration.

INCLEMENT WEATHER

TV and radio stations will announce if the college is closed. Information on closing will also be available on our Web site <http://www.ung.edu>. Students, faculty and staff who have registered under Blackboard Connect Emergency Notification System will receive information not only about college and individual campus closures but also about the status of college and campus hours, including late openings.

Blackboard Connect Emergency Notification System

Emergency situations - from natural disasters to health scares to the threats of violence - require that our campus community be fully prepared and informed. Accordingly, University of North Georgia has implemented the Blackboard Connect service to enhance university communication and emergency preparedness. The Blackboard Connect system is a communication service that enables key administrators and Public Safety personnel to quickly provide all students, faculty, and staff with personalized voice and text messages.

All UNG emails are added into the system automatically. In addition, you may enter a phone number so that emergency announcements can be sent to you via voice and text message. To do this, go to our Banner self-service environment; click on the tab labeled "Personal Information"; then, click on the tab named "Enter Emergency Contacts for Blackboard Connect." Here you can update your information for the Blackboard system.

If you have questions, please contact Public Safety at 706-864-1500 or send an e-mail to emeralert@ung.edu.

COURSE GRADES AND WITHDRAWAL PROCESS

Grades: A, B, C, D, F, W, WF, MW – Should this date be listed at the end of this section?

Incomplete grades (I) - This grade indicates that a student was doing satisfactory work but, for non-academic reasons beyond her/his control, was unable to meet the full requirements of the course. For undergraduate programs, if an **I** is not satisfactorily removed after one semester (excluding summer), the symbol of **I** will be changed to the grade of **F** by the appropriate official. For graduate programs, if an **I** is not satisfactorily removed after two semester (excluding summer), the symbol of **I** will be changed to the grade of **F** by the appropriate official. Under special circumstances, this period of time can be increased with the approval of the department head and the dean.

IP (In Progress) - This grade is appropriate for thesis hours, project courses, Learning Support and English as a Second Language (**ESL**) courses. It is not appropriate for traditional credit courses. If an **IP** grade isn't satisfactorily removed after 3 semesters, the symbol of **IP** will be changed to the grade of **F** by the appropriate official. Under special circumstances, this period of time can be increased with the approval of the dean. However, students who receive a grade of **IP** in a learning support course or an **ESL** will retain this grade due to the nature of the course.

K – This symbol indicates that a student was given credit for the course via a credit by examination program.

MW – Withdrawal for military exigencies.

CR – Credit (for Military experience).

NR – This symbol indicates that the grade was not reported by the instructor.

S – This symbol indicates that a student completed the course with satisfactory work.

U – This symbol indicates that a student did not complete the course with satisfactory work.

V – This symbol indicates that a student was given permission to audit the course. Students may not transfer from audit to credit status or vice versa. If an audit student withdraws from a course prior to the end of the term, a "**W**" will be assigned as the grade rather than a grade of "**V**". An audit student who is dropped by the instructor for excessive absences will be assigned a grade of "**W**".

W or **WF** – A **W** grade indicates that a student was permitted to withdraw from without academic penalty. Students may withdraw from courses prior to the midterm and receive a grade of **W**. Withdrawals without penalty will not be permitted after the midpoint of the total grading period except in cases of hardship as determined by the appropriate official. If a student withdraws before the deadline, the grade of **W** will be given. The grade of **WF** is for students who withdraw after the deadline for the term or commit academic integrity violations.

Link for Supplemental Syllabus:

<http://ung.edu/academic-affairs/policies-and-guidelines/supplemental-syllabus.php>