I. COURSE INFORMATION:

<table>
<thead>
<tr>
<th>Course Number and Title:</th>
<th>Term:</th>
<th>Building-Room:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2008 Foundations of Numbers and Operations (CRN 203)</td>
<td>Summer 2012</td>
<td>IC 116</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours:</th>
<th>Days:</th>
<th>Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Monday-Friday</td>
<td>8:00 AM – 10:05 AM</td>
</tr>
</tbody>
</table>

II. INSTRUCTOR INFORMATION:

<table>
<thead>
<tr>
<th>Professor:</th>
<th>Office Location:</th>
<th>Phone:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Geoff Clement</td>
<td>Russell Hall, Room 103C</td>
<td>678-359-5820</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Office Hours:</th>
<th>e-mail:</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-R 10:05-11 AM and other times by appointment.</td>
<td><a href="mailto:gclement@gdn.edu">gclement@gdn.edu</a></td>
</tr>
</tbody>
</table>

III. TEXT (S) AND OTHER RESOURCES

Textbook:

Chapters 1, 2, 3, 5, 6, 7, and 8.

NCTM *Principles and Standards for School Mathematics* [www.nctm.org](http://www.nctm.org)

NCTM *Curriculum Focal Points for Pre-Kindergarten through Grade 8 Mathematics* [www.nctm.org](http://www.nctm.org)

Georgia Performance Standards [www.georgiastandards.org](http://www.georgiastandards.org)

MyMathLab (Course ID: clement91301)

Mr. Clement’s Faculty Website: [http://www.gdn.edu/faculty/gclement](http://www.gdn.edu/faculty/gclement)

**Calculator:** A scientific calculator is required. Some course work will be done without the calculator, while other course work will require a calculator. Students are not allowed to share calculators during quizzes and tests, and cell phone calculators are not allowed.

IV. CATALOG DESCRIPTION:

**Pre-Requisites:**
MATH 1001, MATH 1111, or MATH 1113

**Description:**
This course is an Area F introductory mathematics course for early childhood education majors. This course will emphasize the understanding and use of the major concepts of number and operations. As a general theme, strategies of problem solving will be used and discussed in the context of various topics.

V. CONCEPTUAL FRAMEWORK:

A Gordon teacher is one who possesses the abilities, skills, knowledge, and confidence to inspire and enable each student to become a lifelong learner.
VI. COURSE OUTLINE:

A. Mathematical Processes
   1. Mathematics as Communication
   2. Mathematics as Reasoning
   3. Mathematics as Problem Solving

B. History of Numeration
   1. Numeration Systems
   2. Place Value

C. Number Sense
   1. Sets of Numbers: Natural Numbers, Whole Numbers, Integers, Rational Numbers, Irrational Numbers, Real Numbers
   2. Even and Odd Integers
   3. Order Relationships
   4. Estimation

D. Concepts of Operations
   1. Operations on Sets of Numbers
   2. Identity Elements for Addition and Multiplication
   3. Inverse Operations
   4. Exploration of Other Bases
   5. Proportional Reasoning and Percents

E. Number Theory
   1. Divisibility Rules
   2. Greatest Common Factor
   3. Least Common Multiple
   4. Prime and Composite Numbers

VII. OBJECTIVES/GOALS/LEARNING OUTCOMES

(A) Specific Objectives:
All students will learn to:
   o Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
   o Understand meanings of operations and how they relate to one another.
   o Compute fluently and make reasonable estimates.
   o Apply multiple problem solving strategies and understand how approaches to solutions relate to one another.

(B) General Education Outcomes: This course, by means of the lectures, activities, and course requirements, addresses the following Gordon College General Education Expected Outcomes:
   1. Students will demonstrate competence in college-level reading and writing.
   2. Students will demonstrate competence in oral communications.
   3. Students will be aware of basic bibliographic research and resources.
   4. Students will conduct routine information technology tasks through the use of a variety of computer applications.
   5. Students will demonstrate a basic knowledge of the fundamentals of college-level mathematics.

(C) GORDON LEARNING OUTCOMES:
The entire toolkit of the Early Childhood Education Program is described by ten conceptual framework outcomes, organized within five categories of the Georgia Framework for Teaching. Each outcome contains four indicators, with the fourth indicator relating to dispositions. In summary, there are thirty indicators related to the knowledge and skills essential to teaching for learning, and ten indicators of
dispositions inherent within great teachers. On the chart below, the ECE program outcomes and indicators are summarized and linked to sources of evidence that will be evaluated in this course.

**Alignment of Framework, Outcomes, and Related Indicators:**

<table>
<thead>
<tr>
<th>Conceptual Framework Outcomes</th>
<th>Indicators</th>
<th>MATH 2008 Foundations of Numbers and Operations Sources of Evidence</th>
</tr>
</thead>
</table>
| CF1. The candidate demonstrates an accurate understanding of elementary curriculum within the contexts of central concepts, tools of inquiry, structures and engagement of learners. | A. Subject Matter  
B. Integration of Subject Content  
C. Diversity  
D. Dispositions | X  
X  
X  
X |
| CF2. The candidate demonstrates knowledge of educational foundations within the contexts of law, philosophy, psychology, sociology, and technology. | A. Child Growth & Development  
B. Learning Connections  
C. Critical Thinking  
D. Dispositions |                                                          |
| CF3. The candidate demonstrates knowledge of learning theory within the contexts of child development, family and parent dynamics, human exceptionalities and diversity. | A. Planning  
B. Response to Diversity  
C. Appropriate Curriculum  
D. Dispositions | X |
| CF4. The candidate is an advocate for the success of all children in their care and provides nurturing guidance appropriate to their development. | A. Respect  
B. Advocacy  
C. Compassion & Understanding  
D. Dispositions |                                                          |
| CF5. The candidate demonstrates simplicity in articulation of the curriculum based upon understanding the complexity of learner needs and the systemic nature of assessment, planning, and accommodations in teaching strategies. | A. Learning Design  
B. Management  
C. Climate  
D. Dispositions | X  
X  
X  
X |
| CF6. The candidate demonstrates an effective utilization of technology and curricular resources in the implementation of learning plans. | A. Learning Strategies  
B. Media  
C. Technology  
D. Dispositions | X  
X  
X  
X |
| CF7. The candidate models expectations held for students in his/her communication, demeanor, commitment to personal growth, and sense of empathy. | A. Communication  
B. Exemplary Behaviors  
C. Empathy  
D. Dispositions | X  
X  
X  
X |
| CF8. The candidate collaborates with parents, other educators, and members of the community to improve the learning process for all students. | A. Collegiality  
B. Parent Communication  
C. Sensitivity  
D. Dispositions |                                                          |
| CF9. The candidate utilizes analysis of the individual student’s assessment to make | A. Analysis of Impact  
B. Reflective Planning |                                                          |
adjustments in teaching to improve performance.

CF10. The candidate encourages students to take responsibility for their learning and provides multiple opportunities for them to develop proficiency.

A. Formative Assessment
B. Data Management
C. Assessment for Learning
D. Dispositions

*Evidence Abbreviations: CC = Course Content; DO = Directly Observed; CWS = Candidate Work Sample; JE = Journal Entry

VIII. INSTRUCTIONAL METHODS:
- Problem-centered teaching
- Cooperative Learning
- Independent Learning
- Direct Instruction

IX. ATTENDANCE:

Class attendance is required. Each student is responsible for signing the Attendance Sheet during each class period. Students are responsible for all instruction, every change in the syllabus, and all material covered in class whether or not they are present. Students who enroll in the course late are responsible for material covered before they enrolled.

Withdrawals from Class

For full-term courses, a student may withdraw from a course up to the midpoint of the semester and receive the grade of “W” without penalty. A student who simply abandons their classes will be given an “F” at the end of the semester. To withdraw from a course, a student may visit the Registrar’s office in Lamdin Hall and process the form through the Registrar’s office.

X. ASSESSMENT

A student’s grade in the course will be determined by individual test scores, projects, and daily assignments. Each student will keep a portfolio with assigned problems, quizzes, projects, and journal entries (together worth 100 points). All daily assignments are due during class with a 20% penalty for assignments coming in late on the same day and a 0 for all missed deadlines. The cumulative average of all of your My Math Lab homework assignments will comprise another 100 points. We’ll also have 4 exams (each worth 100 points), and a comprehensive final exam (worth 200 points). The student’s final grade will then be computed out of a total of 800 points. The final exam may also be substituted for the lowest hourly exam. Your course grade will then be decided according to the following scale (after rounding):

<table>
<thead>
<tr>
<th>Score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100 %</td>
<td>A</td>
</tr>
<tr>
<td>80 - 89 %</td>
<td>B</td>
</tr>
<tr>
<td>70 - 79 %</td>
<td>C</td>
</tr>
<tr>
<td>60 - 69 %</td>
<td>D</td>
</tr>
<tr>
<td>Below 59 %</td>
<td>F</td>
</tr>
</tbody>
</table>

A. There will be four in-class tests given during the semester and a final examination. All tests and the final examination are required. The dates for the in-class tests are announced at the end of the course syllabus and the final examination is announced by the College. If you miss a test, you may receive a grade of “zero” for that test unless you have a documented excuse. Make-up tests are given at the instructor’s convenience. If your final exam grade is higher than your lowest test grade, then the final exam grade will replace your lowest test grade.

B. All quizzes, homework assignments, projects, and journal assignments are required. There are no make-up quizzes and no make-up homework assignments. The lowest portfolio grade will be
C. All daily assignments are due during class time with a 20% penalty for assignments coming in late on the same day and a 0 for all missed deadlines.

D. Writing assignments should be research-based, using best practices for teaching mathematics, not based solely on your opinions. Document your sources. Your paper should be of college-level quality showing competency in spelling, grammar, punctuation, and style.

XI. RESOURCES:
Read your book. Ask your instructor for help in class and outside of class. We will schedule extra help sessions when the need arises. There is free tutorial help available from the Student Success Center. On Gordon’s web page, you will find many resources. To find these, go to www.gdn.edu; Degree programs; Teacher education; Bachelor of Science in Early Childhood Education; Information for current students.

This course is enhanced by a web-based course software package called My Math Lab. The URL for this site is http://pearsonmylabandmastering.com/. There are also significant course resources in GeorgiaVIEW.

The course syllabi and course resources are in GeorgiaVIEW and also on your instructor’s website at http://www.gdn.edu/faculty/gclement/.

Besides office hours, the SSC (Student Center 2nd floor) is available for tutoring assistance.
Consider creating a study group with fellow classmates.

If you need academic accommodations for a disability, you must go through the process of receiving approved accommodations through the Student Counseling office in the Student Center (2nd floor). Their telephone number is 678-359-5585. Any student who is certified as disabled and who thus qualifies for special accommodations must provide the instructor with appropriate evidence of such certification. Reasonable accommodations will be made to students who have proper documentation and inform the instructor at the beginning of the course.

XII. ACADEMIC INTEGRITY:
Each student must do his or her own work on tests and the final examination without assistance from any outside source not specifically authorized by your instructor.

Ref.: Student Code of Conduct – Academic Catalog.
Ref.: Georgia Code of Ethics for Educators

Classroom Etiquette: Students are expected to treat the instructor and other students with respect. Please refrain from the following during class time:

1. Talking with other students
2. Leaving class early (other than an emergency)
3. Leaving the desk to sharpen a pencil in the middle of a lecture.
4. Consistently late coming to class
5. Pagers beeping during class
6. Placing or receiving cellular phone calls or text messaging during class.

All electronic devices (radios, telephones, pagers, etc.) must be turned off upon entering the class.

XIII. OFFICE PROCEDURES.
To get help from me:
1. Bring your textbook, your calculator, and your class notes.
2. Make sure you have read the lesson notes and studied the examples.
3. Be prepared to show me at least two problems from the section that you have attempted to solve.
4. Bring your incomplete or complete solution to each problem.
5. Ask for help as early as possible. Don’t wait until test days to get your questions answered.

NOTE: This syllabus MAY be changed at the discretion of the instructor with the knowledge of the class.

Keys to Success in this class:
1. Have a goal for this class. Make this class a priority. You can succeed in this class!
2. Be on time every day. Don’t miss class; when you must, communicate to your instructors.
3. Review class notes just before and just after class.
4. Read the text. Study the examples. Keep up with the pace of the class.
5. Practice, practice, and then practice some more. Do homework as soon as possible after class.
6. Ask questions. You have the right; asking questions shows you care and will often help others.
7. Read the directions carefully. On tests, start by “unloading” important formulas and concepts.
8. Actively listen in class. Take good notes.
9. Use our tutoring center whenever you need help. Don’t let things snowball.
10. Correct any mistakes you make on quizzes and tests.
11. The final exam is comprehensive. Prepare for it throughout the semester.
12. Be a lifelong learner. Live and learn! Rise to the challenge of college-level mathematics!

SCHEDULE AND READING ASSIGNMENTS
[Other Daily Assignments will be announced in class and posted in the GeorgiaVIEW calendar.]

<table>
<thead>
<tr>
<th>DATE</th>
<th>TEXTBOOK SECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/26</td>
<td>Introductions, 1–1</td>
</tr>
<tr>
<td>6/27</td>
<td>1–2, 1–3</td>
</tr>
<tr>
<td>6/28</td>
<td>2–1, 2–2</td>
</tr>
<tr>
<td>6/29</td>
<td>2–3, Review</td>
</tr>
<tr>
<td>7/2</td>
<td>TEST 1</td>
</tr>
<tr>
<td>7/3</td>
<td>3–1, 3–2</td>
</tr>
<tr>
<td>7/4</td>
<td>INDEPENDENCE DAY HOLIDAY (No Class)</td>
</tr>
<tr>
<td>7/5</td>
<td>3–3, 3–4</td>
</tr>
<tr>
<td>7/6</td>
<td>3–5, Review</td>
</tr>
<tr>
<td>7/9</td>
<td>TEST 2</td>
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<td></td>
<td>NOTE: July 9 is midterm for second session classes (withdrawal deadline)</td>
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<tr>
<td>7/10</td>
<td>5–1, 5–2</td>
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<td>6–2, 6–3</td>
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<td>7/16</td>
<td>Review, TEST 3</td>
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<td>7–1, 7–2</td>
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<td>7/18</td>
<td>7–3, 8–1</td>
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<tr>
<td>7/19</td>
<td>8–2, Review</td>
</tr>
<tr>
<td>7/20</td>
<td>TEST 4, Review</td>
</tr>
<tr>
<td>7/23</td>
<td>FINAL EXAMINATION (8:00 AM - 10:05 AM)</td>
</tr>
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</table>

Do your best! Rise to the challenge! Live and learn!