



Abraham Baldwin

AGRICULTURAL COLLEGE

A State College of the University System of Georgia

TIFTON, GEORGIA

Course Syllabus

Course Name:

FOUNDATIONS OF NUMBERS AND OPERATIONS

Course Number:

MATH 2008

Course 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 numbers and operations. As a general theme, strategies of problem solving will be used and discussed in the context of various topics. Credit for this course is excluded from Area D of the Core Curriculum, and excluded from any Career Technological degree program. Fall, Spring, Summer. 3 credit hrs.

Pre-requisites/Co-requisites:

Prerequisite: Minimum grade of "C" or better in either MATH 1101, 1111, or 1113.

USG General Education Outcomes pertinent to this course:

Quantitative Reasoning and Mathematics: quantitative reasoning and mathematics will be characterized by logic, critical evaluation, analysis, synthesis generalization, modeling, and verbal, numeric, graphical, and symbolic problem solving.

Competence within the context of collegiate general education objectives is defined by the following outcomes:

- Ability to model situations from a variety of settings in generalized mathematical forms;
- Ability to express and manipulate mathematical information, concepts, and thoughts in verbal, numeric, graphical and symbolic form while solving a variety of problems;
- Ability to solve multiple-step problems through different (inductive, deductive and symbolic) modes of reasoning;
- Ability to properly use appropriate technology in the evaluation, analysis, and synthesis of information in problem-solving situations;
- Ability to shift among the verbal, numeric, graphical and symbolic modes of considering relationships;
- Ability to extract quantitative data from a given situation, translate the data into information in various modes, evaluate the information, abstract essential information, make logical deductions, and arrive at reasonable conclusions;
- Ability to employ quantitative reasoning appropriately while applying scientific methodology to explore nature and the universe;
- Ability to discern the impact of quantitative reasoning and mathematics on the sciences, society, and one's personal life.

ABAC Course Learning Outcomes:

Foundations of Numbers and Operations Course Outcomes:

All students will learn to:

1. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
2. Understand meanings of operations and how they relate to one another.
3. Compute fluently and make reasonable estimates.
4. Apply multiple problem solving strategies and understand how approaches to solutions relate to one another.

College Policy on Class Attendance:

ATTENDANCE

Courses at Abraham Baldwin Agricultural College are provided for the intellectual growth and development of students. To attain maximum success, students must attend all their classes, be on time, and attend all scheduled course activities including, but not limited to, field trips, seminars, study sessions, individual conferences, and lectures. This interaction with instructors and other students is an important element of the learning process, and a high correlation exists between class attendance and course grades. A student must understand the importance of regular participation in classroom and laboratory activities. The absence of any student affects not only his or her performance but the performance of the class as a whole. Absence from class, for whatever reason, does not excuse a student from full responsibility for class work or assignments missed. Students must accept this responsibility.

Instructors will keep accurate attendance records and must report the individual number of absences with midterm and final grades. Students whose number of unexcused absences is more than twice the number of class meetings per week (the equivalent of two weeks of instruction) will receive a grade of "F" for the course. Fewer absences than twice the number of class meetings per week may result in grade penalties at the discretion of the instructor. Specific attendance requirements applying to labs, clinics, accelerated classes or Learning Support will be adapted to the unique situation by the appropriate division. Final determination of what constitutes an excused absence rests with the classroom instructor. In implementing this Policy, faculty will not include in a student's unexcused absences those absences incurred due to authorized and approved College sponsored events (or in the case of joint-enrollment students high-school sponsored events) in which the student represents the institution as part of a group or under the direct supervision of a faculty or staff member.

Whenever a student is absent, whether for official or personal reasons, the student must assume responsibility and provide notice to the instructor, preferably in advance, for making arrangements for any assignments and class work missed because of the absence. However, final approval for make up work remains with the individual instructor.

A student who stops attending class without officially withdrawing from the course is subject to this attendance policy and will receive a grade of "F" for the course.

At the beginning of each semester, instructors will explain clearly to their students. specific attendance requirements (including possible penalties). Additionally, they will publish the attendance policy on their syllabi and web-sites.

A student penalized for excessive absences may appeal through the grade appeal process, as stated in ABAC's college catalog and student handbook.

INSTITUTIONAL ABSENCE

A student who serves as an official representative of the college is defined as one who:

is authorized to use the college name in public relationships outside the institution;
regularly interacts with non-college individuals and groups over an extended period of time
(at least one semester);
represents the college as a part of a group and not as an individual;
represents the college under the direct supervision of a college faculty or staff member; and
is authorized in writing, in advance, by the President of the college.

Such a student is in no way released from the obligations and responsibilities of all students, but will not be penalized with unexcused absences when absences result from regularly scheduled activities in which he/she represents the college.

Further, it is the responsibility of each student to contact instructors prior to the absence and to make arrangements to make up any work that will be missed, in a manner acceptable to the instructor. Advisors of activities will schedule off-campus activities in a manner that does not unduly disrupt the learning process for a student.

http://www.abac.edu/catalog/2007_2008/AcademicPolicy.pdf

College Policy on Academic Dishonesty:

ACADEMIC DISHONESTY

Because Abraham Baldwin Agricultural College has the dual responsibility of educating students and helping them mature into worthy citizens who take their place in the larger community, it has adopted a code for dealing with academic irregularities.

Academic irregularities include, but are not limited to, giving or receiving of unauthorized assistance in the preparation of any academic or clinical assignment; taking or attempting to take, stealing, or otherwise obtaining in an unauthorized manner any material pertaining to the education process; selling, giving, lending, or otherwise furnishing to any person any question and/or answers to any examination known to be scheduled at any subsequent date; fabricating, forging, or falsifying lab or clinical results; plagiarism in any form related to themes, essays, term papers, tests, and other assignments; breaching any confidentiality regarding patient information.

Due Process for Academic Dishonesty Cases

- Step 1. When a faculty member suspects that a student has engaged in academic dishonesty, the faculty member will call the student into a private meeting in the faculty member's office. (The division chair will be notified of and will approve any action.)
- Step 2. The faculty member will confront the student with the evidence of dishonesty and/or academic irregularity. The faculty member and the student will discuss the specifics of what occurred. If the student confesses and accepts responsibility for academic dishonesty, then the faculty member will ask the student to sign in his/her own handwriting, a statement which makes clear that the student admits responsibility for the academic dishonesty. The faculty member will then consult with the division chair. The faculty member is then free to reprimand the student, to give a failing grade for the assignment, or to require the student to resubmit the assignment in question. With approval of the division chair, the faculty member can increase the penalty up to and including a "WF" for the course if the incident(s) merit this severe penalty.

- Step 3. If the student refuses to sign a statement accepting responsibility for the act(s) of academic dishonesty, then a full hearing on the matter must be held. The faculty member and chair will document this incident and schedule a meeting with the student. This information will be turned over to the Academic Dean, who will make the determination of charges against the student and notify him/her in writing. The charges will be mailed by the Academic Dean to the student along with a notice to appear at a hearing, and, if the student wishes, to bring witnesses. At least three days' notice is necessary unless the student waives the notice in writing.
- Step 4. If the student requests a hearing, the Academic Dean has the option of hearing the case for administrative adjudication, convening a special hearing panel including faculty and students, or of referring it to the Student Life Hearing panel which handles all other disciplinary matters on campus. The committee will provide its recommendation to the Academic Dean. The Student Life Hearing Panel, when hearing cases of academic dishonesty, will include two faculty members, two students (one of whom will be the SGA president and the other an associate justice,) and the Director of Student Life, who oversees campus discipline and the Code of Conduct. The Chief Justice of the SGA chairs the panel. The Vice President for Student Affairs will serve as advisor to the panel for all academic dishonesty cases. In general, the decision of the Academic Dean or his/her designee will not be appealed to the Student Life Hearing Panel. An appeal of the Dean's decision will go directly to the President who may choose to use the Student Life Hearing Panel to make a recommendation to him.
- Step 5. The student has a right to appeal the decision of the hearing officer or hearing panel within ten calendar days of the decision. The appeal will be to the President or his designee. The President's decision is final. The President reserves the right to review all disciplinary cases and the judgments made during the process.

http://www.abac.edu/catalog/2007_2008/AcademicPolicy.pdf

If there is a student in this class who has specific needs because of learning disabilities or any other disability, please feel free to contact the instructor.

This is a partial syllabus. More detailed information relating to the class and Instructor will be made available to each student.

MATH 2008

Foundations of Number and Operations

Fall, 2009

Professor: Mr. Geoff Clement (gclement@abac.edu)
Phone: 391-5106 or -5100 (Division secretary)
Office: Gray Hall, Room 114
Office hours: M–R 2:15–4:15 pm, F 10–12 (SSC tutoring lab MW 3–4 pm), and other times by appointment
Location: CRN 20295 (MWF 9 – 9:50 am) Britt Hall, Room 105 [August 17 – December 7]

I. General Course Information/Objectives

Prerequisite: Math 1101, Math 1111, or Math 1113 with a grade of C or better. Designed for early childhood education majors (Grades P-5) to be used in Area F.

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. These topics include the history of numeration, number theory, concepts of operations, and problem solving. Offered Fall, Spring, Summer. 3 semester hours.

This course focuses on preparing early childhood education majors to:

1. Understand and use the major concepts of number and operations in mathematics for grades P-5
2. Solve problems using multiple strategies, manipulatives, and technological tools; interpret solutions; and determine the reasonableness of answers and efficiency of methods.
3. Communicate using precise mathematical terminology
4. Construct and justify arguments as well as interpret solutions; and determine reasonableness of answers and efficiency of methods.

Course Outcomes are listed earlier in this document. Course topics include:

A. Number Sense

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

B. History of Numeration

1. Numeration Systems
2. Place Value

C. Number Theory

1. Divisibility Rules (and why they work)
2. Greatest Common Factor (Concept and Algorithm)
3. Least Common Multiple (Concept and Algorithm)
4. Prime and Composite Numbers

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

E. Problem Solving

As a general theme of the course, problem solving strategies will be discussed and used in the context of topics A-D above. Strategies may involve inductive and deductive reasoning.

Students enrolled in classes in the Division of Science and Mathematics will be expected to demonstrate an understanding of subject matter requiring higher order processing skills. Examination questions may include essay, synthesis, analysis, and application; as well as completion, multiple choice, true/false and matching. Computational skills and drawing or diagramming may also be required. Learning disabilities should be brought to the instructor's attention and arrangements made for special needs the first week of classes. Homework is assigned and collected for a grade and should be used as review for each quiz or test. Chapter reviews or review sheets may be given from time to time as homework or extra credit at the instructor's discretion.

Students are expected to:

- arrive for class with proper tools (text book, notebook, pencil, calculator)
- keep personal phone out of sight and on silent during class time (speak with your instructor before class should you experience an emergency)
- refrain from cursing during class
- be in class on time (Division policy: two tardies count as one absence)
- treat faculty in a kind and courteous manner
- complete assignments on the assigned date
- be attentive and actively participate in class
- wear no hats or other head gear on exam day

Repercussions – students will be asked to leave class and will be marked absent for the day if:

- they arrive in class without tools
- they are found sleeping, cursing, or engaging in disruptive behavior
- they are texting or receiving phone calls during class (except for emergencies)

Faculty are expected to:

- begin class on time
- be prepared for class (text book, markers, calculator, handouts)
- treat students in a kind and courteous manner
- provide students with a schedule of events

All members of the ABAC community have an obligation to promote an atmosphere in which teaching and learning can take place in an orderly and efficient manner. To maintain this learning environment, individuals must refrain from behavior that disrupts the teaching and learning process. In order to assure the rights of all students to benefit from time spent in class, faculty members have the right and responsibility to excuse from a class session any individual whose behavior disrupts the teaching and learning process. Serious or continued infractions may result in referral of the student for disciplinary action by the student judiciary or appropriate administrative officer.

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. Be a lifelong learner. Live and learn! Rise to the challenge of college-level mathematics!

II. Materials

A. *Mathematics for Elementary School Teachers*, Billstein, Libeskind, and Lott. Addison-Wesley, 2010.
[Copies of this textbook can be purchased in our bookstore.]

B. We suggest that you use a notebook for class notes and examples (a loose-leaf binder is best), a straightedge, a scientific or graphing calculator, and a 2-pocket folder for your portfolio.

The Student Success Center (formerly Academic Assistance Center) is open Monday through Thursday 8 am-8 pm and Friday 8 am-1 pm.

III. Learning 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. *If there is any student in this class who has special needs because of learning disabilities (or any other kind), please feel free to come and discuss this with me. Reasonable accommodations will be made to students who have proper documentation and inform the instructor at the beginning of the course.*

IV. Academic Responsibility

Students are urged to pay careful attention to ABAC's statement of "Academic Dishonesty" found in the college catalog (online). It is unacceptable to claim the work of someone else as your own. Academic dishonesty will not be tolerated and will be addressed appropriately.

V. Grades and Grading

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, 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. Quizzes (10) will count together as 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):

90	-	100 %	=	A
80	-	89 %	=	B
70	-	79 %	=	C
60	-	69 %	=	D
Below 59 %			=	F

Bonus Points —

1 point for each community service hour (up to 5 hours and 5 points):

The service must benefit a "not for profit" organization and must be voluntary.

1 point each for attending/participating in ABAC functions (up to 5 activities and 5 points):

E.g., an AAC Student Success workshop, an athletic event, a club meeting, etc.

VI. Class Attendance

Students whose number of unexcused absences is more than three times the number of class meetings per week (the equivalent of two weeks of instruction) will receive a grade of “F” for the course (i.e., more than 9 unexcused absences). Final determination of what constitutes an excused absence rests with the classroom instructor. In implementing this Policy, faculty will not include in a student’s unexcused absences those absences incurred due to authorized and approved College sponsored events (or in the case of joint-enrollment students high-school sponsored events) in which the student represents the institution as part of a group or under the direct supervision of a faculty or staff member.

Generally, attendance will be taken within the first few minutes of the official starting time of the class. If the student is not in his/her seat at that time, an absence will be recorded. At the end of the class period, it is the responsibility of the student to communicate his/her attendance to the instructor so that a recorded absence may be changed to a tardy. For attendance purposes, two tardies is equivalent to an absence (Math/Science Division policy).

Whenever a student is absent, whether for official or personal reasons, the student must assume responsibility and provide notice to the instructor, preferably in advance, for making arrangements for any assignments and class work missed because of the absence. However, final approval for makeup work remains with the individual instructor.

Students are expected to attend class each session. A record of your attendance will be kept and sent to the Registrar with your final grade. In order for an absence to be excused, provide documentation such as a doctor’s excuse, authorization from the vice-president, etc. in order to help the instructor make a fair evaluation. Please submit justifications in writing and I will return my decision to you as soon as I can. There will be no make-up exams without an excused absence. Make-ups should be scheduled within a week of the test date or the return to school. Please inform the instructor if you will be arriving late or leaving early for a particular class or if you have an emergency which requires you to leave the classroom to answer your phone.

VII. Withdrawals from Class

For full-term courses, a student may withdraw from a course up to the midpoint of the semester (**October 8**) and receive the grade of “W” without penalty. After this midterm, a student may withdraw only with the permission of the Academic Dean. If permission is granted, the student will be assigned “W” or “WF” according to their average at the time they withdraw. 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 should see their advisor and their instructor to get drop forms filled out and signed. The student will follow the instructions on the form and process the forms with the Registrar’s office.

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