

Adding ACTS Course – Quantitative Literacy/Reasoning

Institution Name: Phillips Community College of the University of Arkansas

Contact Person/E-mail/Telephone: Dr. Deborah King
dking@pccua.edu
(870) 338-6474 ext. 1241

ACTS Course Index Number: MATH 1113

ACTS Course Name: Quantitative Literacy/Reasoning

Institution Course Number: MS 193

Institution Course Name: Quantitative Reasoning

Effective Term/Year: Spring 2020

Submit the following:

1. Departmental Course Syllabus that includes Course Description, Textbook Title/Edition, and Table of Contents **Attached**
2. Math placement exam score required for QL course **Attached**
3. Written Documentation of Curriculum Committee Action/Approval-**Faculty Curriculum Committee Approval Form**
4. Documentation that the QL course has been approved by the college/university as a course option for the state minimum general education core math requirement, **Approval verified by Instruction and Curriculum Team Minutes**
5. ***Provide the list of degrees/programs that will require or will accept the QL course as meeting the math general education core requirement and/or the program major/degree requirement; and provide the AHECB degree code for each degree/program. Attached***
- 6.
7. Indicate if QL course will be offered by Distance Technology-**This course will be offered both by face to face or by distance technology. PCCUA has HLC approval to offer QL/R for the AA degree. We are including this request not only for the AA degree, but also for AAS degrees and the Certificate of General Studies.**

Signature of Academic Affairs Officer:



Date: February 21, 2020

Submit ACTS form electronically via File Transfer by May 15



Course Name: Quantitative Reasoning
ACTS Name: Quantitative Literacy/
Mathematical Reasoning

Campus

Course Number: MS-193
1910

ACTS Course Number: MATH 1113

bzimmerman@pccua.edu

Academic Year: Spring 2020
2:00-3:00 pm;

Meeting Time: Online
12:30-3:00pm;

Meeting Place: Online

Prerequisites: MS-1123; 19+ on ACT Math; or
78+ on ACCUPlacer Elem Algebra

Required Laboratories: none

Credit Hours: 3 **Clock Hours:** 3

Last Update: October 16, 2019

INSTRUCTOR INFORMATION

Instructor: Brian Zimmerman

Office Location: C-103, Helena

Office Phone: (870) 338-6474 ext.

E-mail Address:

Office Hours: MW 9:30am-12:20pm,

TTh 9:30-10:50am,

F by appointment only

COURSE DESCRIPTION

Comprehensive mathematics course designed for general education core and for degrees not requiring college algebra. A strong emphasis should be placed on critical thinking, mathematical modeling, and technology. **It is strongly recommended that the student should have completed Intermediate Algebra, or the equivalent, with a "C" or better.**

EXPECTED LEARNING OUTCOMES

The overarching goal of Quantitative Reasoning is to provide students with mathematical understandings and skills to be productive workers, discerning consumers, and informed citizens. Students will solve problems using mathematical reasoning involving logic, proportions, algebra, and relations. More specifically, **student performances** will include:

1. Identifying problem-solving strategies and applying them to contemporary everyday problems, both in work and in personal lives.
2. Analyzing reports from media to determine completeness and accuracy noting assumptions both stated and unstated.
3. Critiquing public consumer and political information for better understanding, completeness, and accuracy.

INSTRUCTIONAL GOALS, OBJECTIVES & MEASURES

In keeping with the tenets of student performance in a general education course, Quantitative Reasoning is designed to deliver instruction that focuses on process, conceptual understanding, communication, and problem solving found in the following strands:

Personal, State and National Finance

- Explore essentials of creating a family/personal budget
 - Identify effect of trend periodic personal expenditures such as food and entertainment.
 - Compare expenses to income and analyze personal budget.
 - Explore and estimate when necessary recurring costs such as transportation, housing maintenance, and interest payments.
- Understand the difference between simple and compound interest and their effects on savings and expenditures.
 - Identify and apply formulas for computation of simple and compound interest.
 - Explore the sum resulting from periodic deposits in installment savings or periodic payments on a loan utilizing technology to calculate more complex sums.
 - Distinguish between compound interest formulas for periodic compounding and continuous compounding.
- Explore savings and investment accounts
 - Use technology to predict amount of investment for a period of time based on interest, length of investment and type of account.
 - Track stocks over time to understand market variation.
 - Use annual return and percentage of return formulas to predict investment value over time.
- Explore loan payments, credit card accounts and mortgages
 - Use technology to compute loan payments, credit card interest (payments) and house payments given principal, interest, and length of loan.
 - Use technology to solve problems related to “best deal,” payment strategies, closing costs, and other factors that determine car loans or mortgage payments.
- Understand concepts and practices utilized in describing state and national revenues, expenditures, and deficits.

Statistics and Probability

- Represent data graphically (dot plots, histograms, and box plots).
- Use statistics appropriate to the shape of data distributions to compare center (mean, median, and mode) and spread (interquartile range, standard deviation).
- Interpret differences in shape, center and spread in the context of the data sets, accounting for possible extreme data points (outliers).
- When appropriate, use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages.
- Represent bivariate quantitative data on a scatter plot and describe how the variables are related.
 - Fit a function to the data; use functions fitted to data to solve problems in the context of the data.
 - Use technology to determine the line of best fit for data that appear to follow a linear pattern.
- Compute (using technology) and interpret correlation of bivariate data.
- Distinguish between correlation and causation and between conspiracy and coincidence.
- Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

- Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.
- Evaluate reports or print media articles based on statistical data.
- Describe events as subsets of a sample space using characteristics of the outcomes, or as unions, intersections, or complements of other events.
- Understand and determine probabilities of independent and dependent events.
- Understand and determine conditional probabilities, applying in cases such as the false positive paradox.
- Use permutations and combinations to compute probabilities of compound events and solve problems.
- Find the expected payoff for a game of chance (e.g. Arkansas Scholarship Lottery instant win games).
- Analyze risk in health situations and understand the difference between absolute changes in risk and relative changes in risk.

Functions and Modeling

- Use function notation, understand functions as processes, and interpret statements that use function notation in terms of a context.
- Construct graphs and tables that model changing quantities and interpret key features in terms of the quantities.
- Interpret the slope and the intercept of a linear model in the context of the data.
- Graph linear and exponential functions and identify critical points.
- Compute (using technology) and interpret the correlation coefficient of a linear fit.
- Distinguish between situations that can be modeled with linear functions and those modeled with exponential functions.
 - Demonstrate that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
 - Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
- Use linear and exponential functions to model contextual situations such as costs (e.g. initial cost plus time dependent additions) and growth (reductions) of savings accounts (mortgage balances).

Quantities and Measurement

- Understand large and small quantities through use of personal quantitative units, e. g. understanding the size of the national debt or the distance to the moon.
- Understand the use of units, thinking of numbers as adjectives.
- Study multiple ways of comparing quantities including the use of indices, e. g. the consumer price index and its relationship to the changing value of the dollar.
- Investigate ways of finding exact and approximate areas and volumes of geometric and irregular shapes.

PCCUA CORE COMPETENCIES

The five core competencies (**STACC**) are incorporated within the context of the subject being taught. The competencies address skills the College has committed to developing in all students.

- 1) **Social and Civic Responsibility**
- 2) **Technology Utilization**
- 3) **Analytical and Critical Thinking**
- 4) **Communication**
- 5) **Cultural Awareness**

TEXTBOOK AND REQUIRED MATERIALS

Textbook: Using & Understanding Mathematics, A Quantitative Reasoning Approach plus MyLab Math

Access Card, 7th Edition, by Jeffrey Bennett and William Briggs, published by Pearson, Inc.

ISBN-13: 9780135026731

Required Materials: TI-84 Plus/Plus CE graphing calculator, Textbook, MyLab Math access code

GRADING POLICY

Homework Assignments (20%): Homework will be completed using MyLab Math software and will be assigned for each section of material covered in the course. You can attempt the Homework assignments as many times as you would like for full credit, up until the due date. Once a Homework Assignment is past its due date, it will remain open until the Unit Test for that section of material is past due. Any problems completed after the Homework Assignment's due date will be worth 50% credit, but those completed before the due date will still count for 100% credit. **The lowest four (4) homework grades will be dropped at the end of the semester.**

Unit Tests (60%): Four Unit Tests will be given throughout the course of the semester. Tests will be completed using MyLab Math software and will be assigned after every unit of material covered in the course. Each unit covers roughly two chapters in the textbook, except for Unit 3, which covers three chapters. Tests will be timed, and you will have three opportunities to complete each Unit Test, with your best score of the three attempts counting toward your grade in the course. **The lowest Unit Test grade will be dropped at the end of the semester.**

Final Exam (20%): **The Final Exam will be comprehensive and will be a proctored exam.** The Final Exam will be completed using MyLab Math software. On this exam, as well as on all tests, work must be shown in order to receive credit for the problems worked. The Final Exam is the only required proctored exam in this course. More information on setting up a time and place to take your final exam will be given as we get closer to the end of the semester.

GRADING SCALE

A – 90-100%

B – 80-89%

C – 70-79%

D – 60-69%

F – below 60%

MISSED OR LATE ASSIGNMENTS AND EXAMS

Homework assignments not completed by the due date will be worth half-credit until the date of the test over that material, at which point incomplete homework assignments will be given a grade of zero (0).

Homework Assignments will not be reopened after the Unit Test for that assignment is past due for any reason.

There will be **NO MAKE-UP TESTS** in this course. Your lowest unit test score gets dropped at the end of the semester, so that eliminates the need for a make-up test in this course. You may always complete a Unit Test before the due date, but once the due date has passed for a Unit Test, you will not be able to submit it and your grade on that test will be recorded as a zero (0).

ATTENDANCE POLICY

Attendance and punctuality must be a high priority of any math student. Please inform the instructor if you know ahead of time about when you will be absent. **In this course, failing to submit three assignments on-time OR not submitting a Unit Test on-time is considered an “absence.”**

You are considered excessively absent if you accumulate two (2) “absences.” If you accumulate more than four (4) “absences”, you will be dropped from the course and given an EW.

PARTICIPATION

Math is not a spectator sport. In order to do well in a math class, whether online or in-person, one must practice and do work when assigned. Students will not be successful in a math class if they do not practice. The more work students do in a math class, the better their grade in said math class is. In other words, if you are assigned a homework assignment, you should do it in a timely manner, and if you are struggling, feel free to e-mail, call, or come by my office because I will be happy to sit down and work through any and all problems that you do not understand or that you need help with.

EARLY ASSESSMENT OF LEARNING MEASURE

Students will be assessed for learning outcomes by the fourth week of classes, by both online homework assignments as well as the first unit test in the course.

INTERVENTION BASED ON EARLY ASSESSMENT OUTCOME

Students who have been found to not be where they should be in the class by the fourth week will be given several options, e.g., STAR lab or STEM lab tutoring, one-on-one tutoring sessions with the instructor, extra practice assignments, etc., to assist with learning course material.

SUPPORT FOR LEARNING

If you need extra help in math, the STAR lab (C-202) is available for helping math students, and there are also tutors in the new STEM lab (C-204). Also, feel free to stop by my office during office hours, e-mail, or call me if you have questions or need additional help. There are also a great deal of study aids included in your MyLab Math course, such as videos, PowerPoint presentations, etc., and your homework has study aids built in like “View an Example,” “Show Me How to Work This,” and “Ask My Instructor.”

ACADEMIC HONESTY POLICY

Cheating on quizzes or tests, or any other forms of academic dishonesty is prohibited. **The penalty for academic dishonesty in this course is a zero (0) for the assignment with notification of the infraction to the Dean of Instruction. A second instance of academic**

dishonesty will result in a failing grade for the course and may also result in disciplinary sanctions including probation or suspension from the college.

Plagiarism on papers or projects submitted for credit is prohibited. Plagiarism can be defined as unintentionally or deliberately using another person's writing or ideas as though they are one's own. Another person includes other students, tutors, etc. Plagiarism in math is often done by copying someone else's math work or by having someone do online work for you.

CAMPUS SUPPORT SERVICES

Phillips Community College of the University of Arkansas provides student support services that assist students in achieving their educational objective. Those services include advising, financial aid, counseling and guidance, and safety and security.

ADA POLICY:

Dr. Kimberly Johnson is the Vice Chancellor for Student Services and serves as the ADA Compliance Officer. As an open enrollment college, PCCUA strives to meet the needs of students with self-disclosed disabilities who wish to advance their education. A student with a disability must meet with the campus Disabilities Coordinator to obtain reasonable accommodations. Students who have met with the Coordinator are more likely to experience success in a positive learning environment. If you have a disability please contact the Student Disabilities Coordinator for your campus.

DeWitt Campus: Phyllis Fullerton (870) 946-3506 ext. 1610

Helena Campus: George White (870) 338-6474 ext. 1135

Stuttgart Campus: Sylvia Boyd (870) 673-4201 ext. 1809

The process of student referral under the Americans with Disabilities Act can be found in the Student Handbook **OR** on the College Web site at <http://www.pccua.edu/students/student-assistance/students-with-disabilities/>

FERPA POLICY

Phillips Community College of the University of Arkansas complies with the Family Educational Rights and Privacy Act (FERPA) of 1974. A student has the right to inspect and review all of his/her records that meet the definition of educational records. No third party has the right to review student records without the student's permission, with very limited exceptions. For more information contact the Registrar's Office.

INSURANCE

Phillips Community College of the University of Arkansas does not provide insurance for its students. The college does encourage each student to secure his/her own insurance, and for that reason, the college has contacted an insurance agency to assist any student with individual student insurance coverage. Forms for this insurance are available in the Registrar's office.

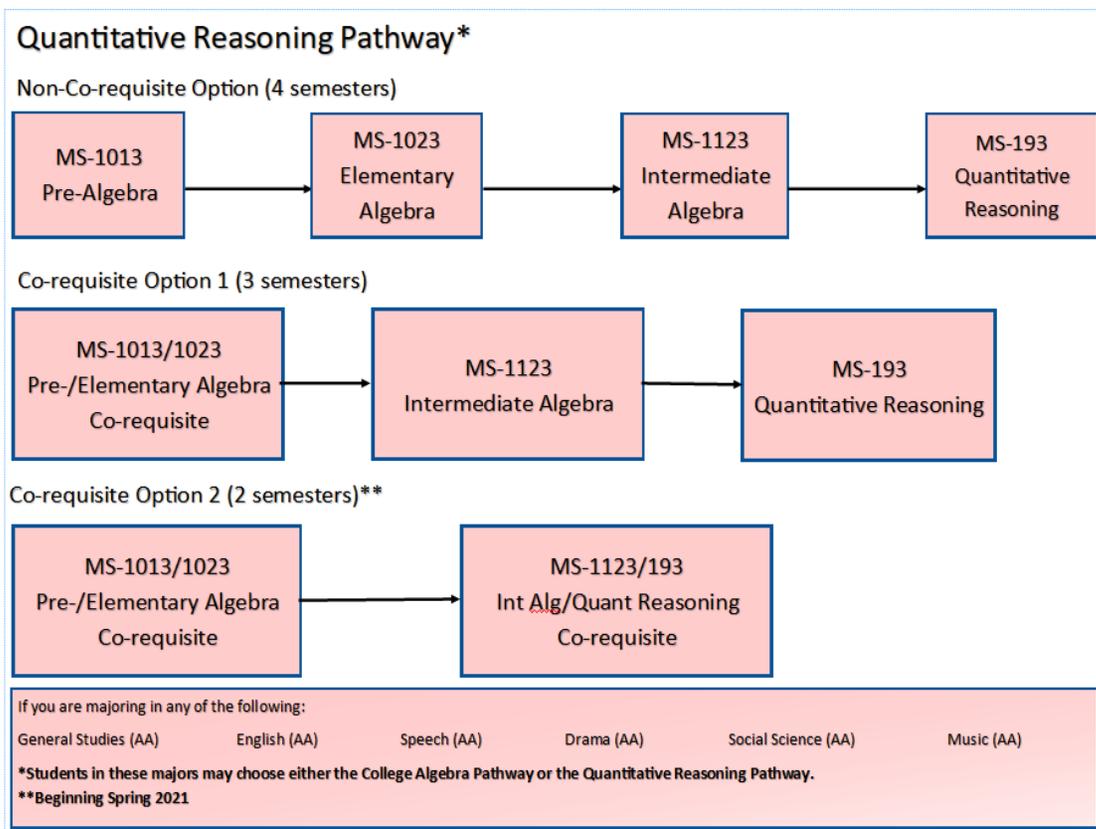
ACTS

The Arkansas Course Transfer System (ACTS) contains information about the transferability of courses within Arkansas Public Colleges and universities. Students are guaranteed the transfer

of applicable credits and the equitable treatment in the application of credits for the admission and degree requirements. Course transferability is not guaranteed for courses listed in ACTS as “No Comparable Course.” Additionally, courses with a “D” frequently do not transfer and institutional policies may vary. ACTS may be accessed on the Internet by going to the ADHE Website and selecting Course Transfer.

http://www.adhe.edu/divisions/academicaaffairs/Pages/aa_acts.aspx

The syllabus and the policies, guidelines, and dates included are subject to change at the instructor’s discretion.



MS 1013 Fundamental Math: Prerequisite: Next Gen ACCUPLACER QAS score of 238 or below. This course is for students having inadequate preparation for MS 1023 and MS 143 or MS 123. The emphasis in this course is on the practice of skills that students need in the everyday world. Topics to be developed are basic arithmetic, metric measure, line and circle geometry, as well as an introduction to algebra. Lab-This lab will provide supplemental academic support to students enrolled in Pre-Algebra (MS 1013), Elementary Algebra (MS 1023), or Intermediate Algebra (MS 1123).

MS 1023 Elementary Algebra (Prerequisite): Completion of MS 1013 with a grade of “C” or higher or Next Gen ACCUPLACER QAS score of 239-246. Co-requisite: MS 000. This course provides an alternative to Basic Math. Topics include exponents, polynomials, factoring, linear equations, quadratic equations, graphs and functions. Lab-This lab will provide supplemental academic support to students enrolled in Pre-Algebra (MS 1013), Elementary Algebra (MS 1023), or Intermediate Algebra (MS 1123).

MS 1123 Intermediate Algebra (Prerequisite): Completion of MS 1023 with a grade of “C” or higher or Next Gen ACCUPLACER QAS score of 247-254. Co-requisite: MS 000. A modern college-level course designed to prepare the student for College Algebra. Topics to be covered include fundamental operations, factoring, fractions, exponents, radicals, quadratics, linear equations, systems of linear equations, and graphs.

MS 193 Quantitative Reasoning (ACTS Equivalent Course Number = MATH 1113) Prerequisite: Completion of MS 1123 with a grade of “C” or higher, ACT Math score of 19 or above, or Next Gen ACCUPLACER QAS score of 255 or above. Comprehensive mathematics course designed for general education core and for degrees not requiring college algebra. A strong emphasis should be placed on critical thinking, mathematical modeling, and technology. **It is strongly recommended that the student should have completed Intermediate Algebra, or the equivalent, with a “C” or better.**

PHILLIPS COMMUNITY COLLEGE
RECOMMENDED CURRICULUM CHANGE

FROM: Brian Zimmerman DATE: 8/19/2019
DEPARTMENT: Arts and Sciences

SUBJECT: Mathematics ADD DELETE MODIFY

COURSE NUMBER	TITLE OF COURSE	CREDIT HOURS	PREREQUISITE	WEEKLY SCHEDULE	
				LECTURE	LAB
MS 193	Quantitative Reasoning	3	See Course Description	3	N/A
ACTS Equivalent Course Number=MATH 1113					

COURSE DESCRIPTION (A)

MS 193 (ACTS MATH 1113) Quantitative Literacy/Mathematical Reasoning
Prerequisite: C or better in MS 1123; ACT Math score of 19 or higher; NG ACCUPlacer Elementary Algebra score of 78 or higher. This is a comprehensive mathematics course designed for general education core and for degrees not requiring college algebra. A strong emphasis will be placed on critical thinking, mathematical modeling, and technology. The majority of the course includes topics from general concepts of functions. Projects, group work, reading, and writing.

MODIFY COURSE DESCRIPTION TO READ (B)

When a description is to be modified, please type the existing description in (A), and the new description in (B).

Approved: *Robin Bryant*
Department Chairperson

ACTION OF CURRICULUM COMMITTEE:

Approved

Not Approved
DATE: _____

COMMENTS:

Vicki Cobb

Chairman, Curriculum Committee

Prepare three(3) copies for the Committee

- (1) Vice President
- (2) Secretary, Curriculum Committee
- (3) Chairman, Curriculum Committee

8/19/19
1300

INSTRUCTION AND CURRICULUM TEAM
September 12, 2019

Members present: Carol Birth, Robin Bryant, Vicki Cobb, Phyllis Fullerton, Deborah Gentry, Aaron Germany, Cindy Grove, Debbie Hardy, Amy Hudson, Linda Killion, Debby King, Kim Kirby, Jeanne McCullars, Monica Quattlebaum, Kim Rawls, Nichole Scarboro, Carolyn Turner, Michelle Waites, Julie Pittman and Shanna Pryor

Members absent: Andrew Bagley, Sylvia Boyd, Blake Cannon, and Kayla Holland

Minutes

Dr. Debby King, Vice Chancellor for Instruction presented the minutes from the May 1, 2019 meeting. By a show of hands, the minutes were approved.

Numbers Update

Dr. Debby King reported it is too early to know our funding formula for this semester. The funding formula is based on full time enrolled students that advance and complete (this report runs 2 years behind).

Arts & Sciences Curriculum Changes

Robin Bryant, requested the addition of MS 193 Quantitative Reasoning be added to the course offerings. This is an ACTS course and is transferrable. The course is for students who do not need College Algebra and have an emphasis on critical thinking, mathematical modeling and technology. The plan is to offer this course online. Amy Hudson made a motion to approve MS 193 be added to the course offerings, with a second by Debbie Hardy. By a show of hands, *the motion was approved.*

Robin also presented a modification to ECD 263 Preschool Curriculum. Joyce Hargrove and Yvette Robertson requested the modification because our program does not follow the NAEYC Associate Standards. Carolyn Turner made a motion to approve the modification to ECD 263 Preschool Curriculum with a second by Kim Kirby. By a show of hands, *the motion was approved.*

Allied Health Curriculum Change

Amy Hudson requested the addition of four non-required, elective nursing courses. The courses are being added for transfer students who need additional courses to meet 15 credit hours for the semester. NG 1011 Special Topics in Nursing I, NG 1021 Special Topics in Nursing II, NG 2031 Special Topics in Nursing III and NG 2041 Special Topics in Nursing IV. The courses will be offered online and are non-transferrable. Debbie Hardy made a motion to approve the addition of the four courses NG 1011, NG 1021, NG 2031 and NG 2041. Michelle Waites seconded the motion. By a show of hands, *the motion was approved.*

Business Department Curriculum Changes

Monica Quattlebaum requested adding CT 113 Computer Information Systems or CT 153 Computer Operating Systems to the required curriculum for the Certificate of Proficiency: MS Operating Systems Desktop Support. This would increase the total number of credit hours to 12. She also requested adding NT 213 Information Security Essentials to the Certificate of Proficiency: Maintaining & Managing Personal Computers to make the total 12 credit hours. Amy Hudson made a motion to approve the addition of the courses to the CP for MS Operating Systems Desktop Support and the CP for Maintaining & Managing Personal Computers. Robin Bryant seconded the motion. By a show of hands, *the motion was approved.*

Other Business

Nichole Scarboro indicated that Gear Up is paying for coding requirements needed for students to graduate. She is encouraging teachers to get the license to they can teach the courses and has 6 interested at this time. She does not have a qualified teacher. Monica Quattlebaum and Nichole will discuss this issue further.

Carol Birth invited everyone to Adult Education on September 19th from 11:30 a.m. – 1:30 p.m. as part of the Statewide Open House.

Substantive and non-substantive changes to the PCCUA Board Policies and College Procedures Manual

Dr. Debby King presented substantive changes to the 100 and 200 Policies. She indicated the Policy Manual is available to everyone in Web Advisor. Changes have been made based on the UA System Office and General Counsel suggestions. Changes to align and correct wording, capitalization, etc. have been made. After going through all of the 100 and 200 Policies a motion was made by Carolyn Turner to approve the substantive changes with a second by Deborah Gentry. By a show of hands, *the motion was approved.*

Dr. King went through the 400 Policies indicating all changes that were made. Monica Quattlebaum made a motion to collectively approve all changes with a second by Linda Killion. By a show of hands, *the motion was approved.*

In the 500 Policies there were two that needed additional changes based on state requirements, AP 500.02 and AP 500.03 policies. Since Scott Post was to look these over before he resigned, Dr. King will e-mail those to him to review for the committee. Linda Killion made a motion to accept all changes except policies 500.02 and 500.03, which Dr. King will e-mail to everyone at a later date for approval. Monica Quattlebaum seconded the motion. By a show of hands, *the motion was approved.*

The 300 Policies were reviewed. It is being recommended for a student to have a 2.0 GPA in order to take an Independent Study (AP 363.04) instead of the previous 2.5 GPA. It is also recommended for online students to have a 2.0 GPA to take on online course (AP 363.06). We will not vote on 370.02 or 377. due to additional changes needed. It was recommended to vote on a battery of all changes except as modified. Deborah Gentry made a motion to accept all changes except AP 370.02 and BP 377. Vicki Cobb seconded the motion. By a show of hands, *the motion was approved.*

With no further business, Michelle Waites made a motion to adjourn at 4:07 p.m. with a second by Robin Bryant.

Respectfully submitted,
Linda Miller

Addendum: On Friday, September 13, 2019 Dr. King sent an e-mail reminding everyone she will be e-mailing the withdrawn policies AP 500.02, AP 500.03, AP 370.02 and BP 377 next week. Also AP 363.04 Independent Studies and AP 363.06 On-line Course Enrollment will be sent to be voted on electronically.

1. PCCUA approves the Quantitative Literacy/Reasoning course for the **Associate of Arts Degree** with any of the following majors:

General Education
Business Administration
Early Childhood Education
Education
English, Speech, Drama
Forestry/Wildlife Management
Law & Social Science
Music
Physical Education
Political Science/Public Administration

2. PCCUA request approval to include it as an option in the Certificate of General Studies.
3. Additionally, PCCUA approves Quantitative Literacy/Reasoning for any of the Associate of Applied Science Degrees. Most of the student enrolled in AAS programs are more appropriately placed in Technical Math. Although the college approves students taking Quantitative Literacy/Reasoning for an AAS, certain program requirements may not accept this course for the math (ADN, MLT) requirement.

Allied Health

Associate Degree Nursing (requires Algebra at this time but want to leave this option open)
Health Sciences (requires Algebra at this time but want to leave this option open)
Medical Laboratory Technology (requires Algebra at this time but want to leave this option open)

Applied Technology

Construction Technology
General Technology
Graphic Communications

Business

Business Management
Information Systems Technology
Office Technology

Other

Behavioral Health
Criminal Justice
Early Childhood Education