

Minutes of the  
 Academic Advisory Committee on Mathematical Subjects(ACMS)  
 March 1-2, 2018  
 Middle Georgia State University  
 100 University Parkway, Macon, GA 31206

<b>Institution</b>	<b>Representative</b>
Abraham Baldwin Agricultural College	Melanie Partlow present
Albany State University	Seyed Roosta present
Atlanta Metropolitan State College	Gyuheui Choi present
Augusta University	Bruce Landman
BOR University System Office Liaison	Barbara Brown present Tristen Denley present
Clayton State University	Chaogui Zhang
College of Coastal Georgia	Tanya Cofer present
Columbus State University	Ben Kamau present
Dalton State College	Richard Hambrock
East Georgia College	Da'Mon Andrews
Fort Valley State University	Dawit Aberra present
Georgia College & State University	Robert Blumenthal present
Georgia Gwinnett College	Jeff Hildebrand present
Georgia Highlands College	Melanie Largin present
Georgia Institute of Technology	Guillermo Goldsztein
Georgia Southern University	Sharon Taylor present
Georgia Southwestern State University	Kailash Ghimire
Georgia State University	Val Miller Robby Williams present Michael Stewart present
Gordon State College	John George
Kennesaw State University	Philippe Laval for Sean Ellermeyer present
Middle Georgia State University	Mary Wolfe present
Perimeter College at Georgia State University	Donna Brouillette
Savannah State University	Tilahun Muche for Mulatu Lemma present
South Georgia State College	Tammy Dingler for Lisa Howell present
University of Georgia	Malcom Adams
University of North Georgia	Diana Spence
University of West Georgia	Rui Xu
Valdosta State University	Shaun Ault present

Lunch was served as members continued to arrive and register.

The meeting began at 1:15 with a welcome by the Chair, Dr. Sharon Taylor, followed by an introduction of ACMS members. There were 18 members in attendance as well as the USG representative, Lori Haygood and Barbara Brown.

**Barbara Brown Presentation:**

System office initiatives: Gateway to Completion, Math Pathways, Professional Advising, Placement, and the Momentum Year. Power point presentation to explain the different topics. Every committee member was asked to get a recommendation list for majors who need College Algebra and for those who need Quantitative Reasoning, so students can be placed appropriately. We were also asked to meet with different departments and advisors at their home institution and encourage them to have students take Quantitative Reasoning if they did not need Calculus.

Dr. Brown showed a listing of the common course number and descriptions. Quantitative Reasoning needs to be more uniform across institutions and an agreed upon description is on record. We were asked to check our description and change it if necessary. Math Modeling has an adequate description, but it is shorter than the other two and we need to make sure the outline matches with the outcomes for the course.

New placement criteria for Learning Support and Co-requisite courses: Those were reviewed by Dr. Brown and she discussed the progression to College Algebra. There was some discussion on the present placement of math students: use of MPI, SAT/ACT scores with the High School GPA, use of Accuplacer – general discussion of what is and is not working.

**Other discussion included:**

**Statistics** to be a 1000 level common number/common topic course. Some institutions have resisted using Statistics in Area A, there was some discussion and it was agreed not to have Statistics as an Area A course. It was agreed that Statistics would be numbered 1401 by Fall of 2019.

**Math for Elementary Teachers** is not listed in Math, but in the Education section and should be moved to the Math section. Need to update the standards and outcomes for this course. Might consider a common number as well.

**DFW rates:** Members believe judging faculty on DFW rates is inappropriate. Some students drop because they do not want a B or C. Members agreed that often students withdraw for personal reasons having nothing to do with the instructor or the course. Should we change the requirements for withdrawals and limit the number of W's allowed per student?

**ACMS Bylaws:** Since the consolidations we have two members on the committee from one institution. While two or more can serve, there is only one voting member.

**ACMS Minutes:** Last minutes listed were 2013, so please send Dr. Brown the minutes for 2014-2017 so she can update the website.

**AP Credit:** Each member should review their credit offering for AP courses. General discussion followed concerning Calculus in Area A, use of K credit, transferability, and the next course when credit is awarded.

**Fourth course option for DOE:** Linear Algebra from Cobb County Schools – committee prefers students to attend their local college or university and receive college credit. Members

agree that students in Calculus are ill-prepared and faculty would like to see students receive fundamental algebra work instead of more upper level coursework.

**Instructional Guide from the MAA:** Power point on active learning to engage students. Free from the MAA website: MAA instructional guide. Three different practices discussed (classroom, assessment, and design). Easy to follow vignettes to illustrate instructional practices to facilitate meaningful learning for students of mathematics.

**Subcommittee meetings** were held from 4:00-5:00.

The meeting reconvened at 8:30 Friday morning (March 2<sup>nd</sup>) with approval of the minutes from the 2017 meeting.

### **Tristan Denley Presentation:**

**Momentum Year** – improving student success in standardized initiatives throughout the system. Addressing student success from different directions: mentoring, encouraging, mindset, tutoring, major choice/experience, and travel abroad.

**Pathways for college success** – creating clear pathways for college students to experience their desired major and not take courses they do not need – make learning meaningful for their major.

**Remediation** – traditional remediation resulted in a low percentage of students persisting to graduation. The new system places students in a math course that will count in area A (but may not count in area A if they are pursuing a STEM field). It allows students to complete area A in the event they do not persist in the STEM field.

**Math Pathways** – be more specific about who needs Calculus and who does not. Only students in a major which requires Calculus should be taking College Algebra and all others should be taking either Quantitative Reasoning or Math Modeling (whichever is offered at your institution). Faculty in the non-mathematical field cannot agree that College Algebra is not required for every major and in some cases Quantitative Reasoning suits the major much better. Have the institutions considered changing the names of College Algebra and Trigonometry to Precalculus Algebra and Precalculus Trigonometry to indicate these courses as a prerequisite to Calculus? We have discussed it before and it was agreed to leave the course titled without the Precalculus prefix.

**Discussion: Calculus path and Statistics path** – There was some discussion on which course is a better preparation for Statistics, College Algebra or Quantitative Reasoning. Should statistics be counted as an Area A or Area D course? Introductory Statistics courses should have a 1000 numbering to indicate their freshman status. Some schools require a math in Area D and it was agreed that Statistics should not become an Area A course. There was some discussion concerning how to help students be more successful in Calculus I. Dr. Denley believes the sequencing is key – longer sequences create less success. He asked the Committee to consider creating a shorter pathway to/through Calculus. Many of the members feel that students are extremely under-prepared now and to make a shorter pathway would decrease the level of understanding and the success rates. The combo course Precalculus/Calculus I was phased out at Georgia College because it was found to be ineffective and students were less successful in Calculus II as a result.

**Reasons for DFW's** – Institutions need to make more sense of/find the reasons for W's. Should we reduce the ability for students to withdraw from a class? Should we reduce the number of W's each student is allowed? Should students be required to only withdraw under predetermined circumstances? Dr. Denley believes that younger students are more likely to drop classes for

reasons that faculty/administrators may not feel are valid. Can we devise a way to check student reasons for dropping a course.

**Statistics common course number** – Introductory Statistics courses should have a 1000 numbering to indicate their freshman status. Members previously agreed on a common topics list for Statistics and this meeting agreed to a common course listing of 1401 to match the eCore listing. Numbering will be changed by 201908 for USG schools. Most schools are labeling the course with a STAT prefix, others use the MATH prefix and either is acceptable.

**Working with K12 to develop courses and timelines** – We need to work better with the K12 system to improve skills and better prepare students for college level classes. In Tennessee (where Dr. Denley came from) Seniors in High School must take a math class their last year and the Senior math class would like up with the course they intend to take in College. Courses were tailored to specific schools students would be attending and what math class they would need for their major. Could we do something like that here? Students need to be STEM ready if they are going to be STEM majors. Next question: What does that look like? How can we help the K12 system accomplish STEM ready students? We may need to consider placement and make sure it is indicative of student success.

**Co-requisite model** – currently there are different co-requisite models. Some offer 1-hour lab, others offer a 2-hour lab, and the rest offer a 3-hour lab. What is the difference in material covered, the grading policy, and what warrants the difference in hours? There are programs using ALEKS and NEWTON. There is a controlled study comparing HAWKES and MYMATHLAB against no software. There are others using the EMPORIUM model to work at your own pace to complete two courses instead of one. Data is out there to support digital learning will improve student outcomes. Could include Calculus with access to remediation in College Algebra through software and can weave the price into the cost of the course. Justified cost is more important than just cost effective. Dr. Denley is working with publishers to drive cost down and allow students access to software from day one – the school pays and bills the student. Dr. Denley plans to collect data on the success of co-requisite students after the change goes into effect, but we need to make sure we are not comparing the old sequence with the new sequence. The goal is to close the gap on average and under-prepared students, although we never expect the gap to completely go away. Some believe the old learning support courses gave the students time to adjust to college life and expectations. It gave the instructor time to work on the mindset of the students and mentor them. We need to change our mindset and think of mentoring our students and working alongside them instead of instructing. It is important to include metacognitive and cognitive skills – explain what students need to know and show them why they need it instead of placing and instructing. If students feel they can overcome the barriers to attend college, only to be placed in learning support, we have affirmed that they are not ready for college or are not college material. The co-requisite model is enabling them to be successful in college even if they need support. Students are perceiving this as a penance because of our course description and the way we treat the course. There are different levels of preparation and they should be treated differently.

**Old Business:** The Gen-Ed Council must approve the number change before this committee would make the changes to the catalogs. The topics list for Statistics has been created and agreed upon, and the numbering would become 1401 with schools choosing their own prefix of MATH or STAT. The committee chose 1401 to match the eCore numbering. The 1401 number was checked and no other institution is already using this number. Motion made by Blumenthal and seconded by Wolfe. The motion passed unanimously.

**Minutes for 2017 Meeting:** The Statistics proposal had one error which was changed. There being no other corrections, the topics list for Statistics was approved with the new numbering. Motion made by Blumenthal and seconded by Hambrook.

### **Subcommittee reports:**

**Assessment of the Major** – Only one member attended so he joined another subcommittee meeting. That member will email the others and get back with the committee. They are not closing the loop and need to make a better effort.

**Curriculum and Transfer of Credit** – The discussion revolved around co-requisites and the linking of courses. Much of the information has been discussed previously.

**Distance Learning** – Wolfe informed the group that the eCore has revised their courses. College Algebra was changed to meet the standards set by the ACMS. Eight review sessions became four. Wolfe will check to make sure they are using the new course description.

**Course and Textbook Information** – Griffin has the newest version of the textbook spreadsheet and members are welcome to change them as needed. He will make changes and recirculate. Members should check the calculus inventory and can edit/revise as needed. There are currently five institutions working with Open Resource books because of cost issues, but some are complaining about the quality (and some did not choose to use the OER because of quality). Some institutions are moving away from the OER because the quality of the software of My Math Lab is markedly better.

**Placement/LS** – Hambrook believes (and others agreed) that the placement needs revision. There is concern in the group about the use of Math 1001/1101 as a prerequisite to Math 1111. Members feel this is an inappropriate precursor to College Algebra.

**Interdisciplinary Liaison** – Blumenthal would like to have various academic groups across the system give definitions/requirements so we can identify and address mutual issues. Perhaps have a person or group answer all questions concerning pathways to give guidance on interdisciplinary issues and collect data on success. Upper level classes are an issue between various institutions and we might consider creating a topics list for more courses in the future. IF there are courses offered that are tailored to a specific group, i.e. Statistics course that is tailored to the Social Sciences should not be numbered 1401. Courses which are tailored to certain disciplines (as described above) should not transfer as the generic course, i.e. Business Calculus should not transfer as Calculus I.

There were only two committee members present so not much was discussed on Thursday.

**K-12 Curriculum Advisory** – The DOE would like to offer a Linear Algebra course, but is this too optimistic and would the information be covered peripherally? Members agree students who are ready for Differential Equations or Linear Algebra should become MOWR (Move On When Ready) and take the course at a local College or University. Before agreeing to accept these courses taught on a High School level, the committee would like to know the credentials of the teachers, the topics covered, and the depth of knowledge students would be expected to know. The DOE will continue to work on some course offerings and submit them to the committee for review and recommendations at a future date.

**New Business:**

**The Bylaws** would require charges for two new committees with an electronic vote in four weeks. No changes will be made today, but will be sent via email in the near future.

**AP credit** will be formally revisited next Fall. Each institution should review their standards for AP credit and acceptance.

**Fourth year course option** for High School students – comments will be sent to Sheila Jones.

**Instructional Practices Guide** will be sent out with Martha's permission.

**Executive Committee for 2018-2019**

Sharon Taylor – Past Chair

Melanie Partlow – Chair

Tonya Cofer – Chair Elect

Georgia State Department Chair – Research Rep – Executive Committee At Large

Chaogui Zhang – Clayton State University – Regional Rep – Executive Committee At Large

**Location for 2018 Meeting**

Coastal Georgia in Brunswick.

Motion by Blumenthal, seconded by the group, approved unanimously

Thank you again to Macon State College for hosting. Adjourned at 11:30.

## **Proposed Common Elementary Statistics Course MATH 1401—Elementary Statistics**

### **MATH 1401: Elementary Statistics (3 credit hours)**

Catalog Description: This is a non-calculus based introduction to statistics. Course content includes descriptive statistics, probability theory, confidence intervals, hypothesis testing, and other selected statistical topics.

Prerequisite: Completion of an Area A MATH course or placement based on the institution's placement process

A. Uniform Requirements: 60% to 80% of class time will be spent on these topics

- Sampling and data
- Graphical and numeric descriptive statistics (central tendency, variation, position)
- Exploratory data analysis
- Basic probability theory (including normal distribution, t-distribution)
- Confidence intervals
- Hypothesis testing

B. Additional topics: 20% to 40% of class time will be spent on selected topics from the following list.

- Discrete distributions
- Simulations
- Correlation
- Regression
- Chi-Square
- ANOVA
- Other statistical applications