Math Curriculum Alignment

Meeting Minutes

February 24, 2012
UCF Campus
9:00 am – Noon Math Meeting, Math & Physics Building, Room 318
Noon – 1:00 pm Lunch Provided in Live Oak Ballroom
1:00 – 3:00 pm Cross-Disciplinary Meeting with Math, Physics & Chemistry, Live Oak Ballroom

In Attendance:
Post-Secondary: DeAnn Bohm (BCC); Allan Danuff, Kirby Brown, Michael Jamieson (CCF); Richard Tamburro (DSC) Thom Kieft, Sybil Brown, John Shea (LSCC); Tony Malaret, Carole Williams (SSC); Lori Dunlop-Pyle, Helen Hill (UCF); Melissa Pedone (VC).
Secondary: Greg Pink (Lake County); Veronica Yates-Riley (Orange County); Lisa Greco (Osceola County); Aglaia Christodoulides, Rebecca Devor, Marcus Wong (Seminole County); Chris Burk, Kelly Lawrence, Cookie Norman-Tadlock, Doreen Oswald, (Sumter County); Margaret Bambrick (Volusia County).

I. Welcome and introductions
   a. Helen Hill welcomed the group. Lori Dunlop-Pyle and Marcus Wong served to moderate and record the meeting discussion. Piotr Mikusinski, UCF Mathematics Department Chair, provided a special welcome to the group.
   b. Lori-Dunlop Pyle (UCF) discussed advertising Mathematics as a career
      i. What we often hear from students is that they have a talent in mathematics but do not consider a career as mathematicians because they only have experiences with teachers
         1. If you need any materials, we can help you connect with MMA, to help explain possible careers to students
         2. UCF has a relative low number of math majors, 1% of total enrollment on the national average should be math majors (UCF is below that)
   c. It was announced that Karol Yeatts, Director of Florida’s Office of Mathematics and Science with FDOE is interested in our work though was unable to attend the meeting.
      i. A number of questions were posed regarding our work with the state.
         1. “What has been accomplished so far as going to the state?”
         2. “What happens when we come up with this, will it make its way to the DOE?”
         3. “What will they do with the information that is submitted to them?”

II. College Readiness Testing
   a. (LISA GRECO) 113 (PERT) as set state college ready cut off at the high school level
   b. 123 (PERT) is the college bar (college algebra) at the community college level
      i. We had such a low percentage make the 123 cutoff, those scoring 113 would likely need remediation
         1. (LORI) so what do you need from the colleges?
         2. (LISA GRECO) Valencia gave Osceola the package and it was turned it into a PowerPoint, but the students who took the test said it was a lot different than what was in the PowerPoint packet
            a. ALL THAT was provided was a 10 question sample
            b. Perhaps have teachers take the PERT themselves?
            c. There are things associated with the PERT test that aren’t grade level aligned, so if they fall below the cutoff, you don’t know what grade level they tested in
   3. The placement test is very important (UCF) and students are placed into college algebra (due to really lacking skill or not taking it seriously) they will have to work through the math progression schema
      a. How far will the Placement test assess? Up to trig?
b. Lori provided the access for Math placement information: http://utc.sdes.ucf.edu/mpt-content

c. Providing the Chemistry and Physics Test would be nice to see the level of math required

d. A number of questions and scenarios were discussed regarding placement for AP, Cambridge, and IB. Additional information can be found in the Undergraduate Catalog (http://www.catalog.sdes.ucf.edu/UCFUGRDCatalog1112.pdf). Specific reference to accelerated educational opportunities can be found on pages 65-68.

c. Placement is for putting student where they are ready to be successful
   i. In theory, a student takes the exam in stages
      1. Stage 1 is Algebra (30% of questions on exam is from intermediate algebra)
         a. Students place into intermediate algebra if they score lower than 30%
         b. 30% - 80% into College Algebra
         c. Higher than that is Pre-calc and Trig
         d. If they pass through those sections, they can test out of pre-calc and trig
         e. If they complete both of those in satisfactory fashion they will be placed in to Calc 1

d. Administration of exam is separate from the Math Department
   i. University Testing Center handles it (done through Pearson, roughly MYLABS)
      1. If you don’t take the exam, and you have to take it, you are in trouble
         a. It is not an adaptive test
         b. Tammy Muhs is the person to talk to about testing

e. The fastest growing course here is Intermediate Algebra
   i. If you go online there is a practice test available, students are required to certify they took the practice test
      1. 20% of those that say they certify, have not taken the practice test
      2. AVAILABLE – University testing center website
         a. No calculators at all until after Differential Equations (they are not permitted)

f. Send an email to mathplacement@ucf.edu to allow access by a guest to take the test

III. Goals from Curriculum Alignment Conference
  a. Provide constant communication of course descriptions and ongoing assessments between levels to include discussions regarding Common Core standards and assessments.
     i. Website is currently under construction to provide better functionality and resources though administrative materials remain accessible.
     ii. What about course number system (K-12 progression, mandated curriculum)
        1. Most of the course descriptions and charts are up to date
           a. Statistics is incomplete because we need input from Statistics department.
           b. More descriptive and specific standards (similar to K-12) instead of vague

b. Discuss and align placement process from secondary to post-secondary (6-20).
   i. PERT is not a good gauge of placement – they are not successful from the placement test
      1. DATA supports that PERT does not adequately place students, students placed into intermediate course achieve lower marks, (students should have been placed into developmental math)
         a. PERT did not have a predictive value (MELISSA FROM VALENCIA while studying cohort of students in developmental 2)
c. Continue to consistently align the concepts taught and tools and technologies (pedagogical vs. instruction) used in the K-20 levels, modifying instruction to achieve desired learning outcomes.

i. MyMathLab
   1. SSC (Tony Malaret) From college algebra up to calculus levels
      a. UCF uses it for everything below CALC I
         i. Digital copies of text used, hardcopy not required, but recommended
      b. UCF (likes MyMathLab rather than Stewarts)
         i. CALC I started with new book, then CALC I & II next fall, then all 3 levels there after
      c. VALENCIA uses alternate program that is funded by Bill Gates Foundation, to allow augmentation of any adopted textbook
         i. Generation of problems done by the Department
      d. College Of Central Florida – uses MyMathLab and WebAssign

IV. Tour of the UCF Math Lab (http://mall.cos.ucf.edu/)

V. Identify Cross-disciplinary issues for afternoon session
   a. Brainstorming of ideas resulted in the following:
      i. Issues with Vectors (students in Pre-Calculus are taught in AP Physics B solving it the Physics way)
      ii. Approach that is taken and level of depth they are teaching vectors
      iii. (From Hillsborough County) County organized Physics and Calculus teachers to come together for a whole week to discuss alignment
      iv. Pre-requisites for given courses (skills and depth of coverage)
      v. Word problems (application of concepts and problems)
      vi. Is there a default method that is taught to be used in the science classroom that differs from the math classroom
      vii. What applications should we be teaching
      viii. “I don’t look at math as a service subject but as a philosophy and language. When I got my math degree, I always took an art class or writing, or literature class. Every time I sat in those courses involved math. History didn’t have math unless I took math history. I think other disciplines should take some responsibility for teaching math. I think there are more business course majors and physics majors. We don’t seem to reach out to the other disciplines.
         1. The culture is missing in math.
         2. Cultural components-historical context- math point of view
   b. Finalized Cross-disciplinary issues defined
      i. Vectors – understand how it is taught in physics
         1. What, how much, others
            a. 2049 basic physics
            b. In the physics level to take a force (vector) and break into component form, horizontal, vertical, etc (using trig)
            c. Vector analysis of molecular formulas in chemistry
            d. 3rd week of Physics is vectors
               i. Measurement systems
               ii. Motion (then get into vectors)
               iii. Standard and Honors Physics – algebra 2 is appropriate math
      2. Logarithms-application
         a. How is it used, word problems
      3. Prerequisite math skills-science course
         a. Different levels of knowledge, placement and methods
      4. Significant digits–where should they be learning the concepts
         a. Other applications where foundations are needed
      5. Cultural components-historical context
         a. The math point of view
6. How in-depth with applications
7. What type of technology are they using?

VI. Next Steps
   b. The Curriculum Alignment Conference will be on October 26, 2012.