Department Annual Report

Non-Perkins Programs

2012-2013

Mathematics

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Department Information

Current year goals
Our goals for this year and answers to the posed questions are as follows:

- **Improve consistency of content delivery in all of our courses, especially in Ma 107 and higher.**
  
The formation of departmental subgroups to address this issue in Ma 107 and all of our Calculus courses is ongoing. Implementation of course-specific guidelines will begin in the 2013-2014 academic year.

- **Make every effort to hire a minimum of two FT faculty.**
  
  Departments can make efforts but only administrations can turn those into realities. We are encouraged that we may have the opportunity to hire two new tenure-track faculty to start in Fall 2014.

- **Continue efforts to provide greater coordination of Ma 095/6/7/8 and Ma 107.**
  
The coordination of Ma 095/6/7 has been strong for several years and is stable at that level. Significant efforts on the part of our Ma 098 coordinator have vastly improved consistency of content delivery and student evaluation; further improvement is possible and anticipated for 2013-2014. Ma 107 is much more unwieldy. It is our biggest course in terms of enrollment, with many sections taught by many adjunct, and its possible re-designation as a developmental course lends itself to significant uncertainty. Nevertheless progress has been made, with data collection and analysis ongoing and expected to increase in 2013-2014 due to additional time that has been made available to the course coordinator.

- **Improve communication of professional expectations to all faculty, especially adjunct.**
  
  This has been and will continue to be addressed in our efforts to bring greater consistency to all of our courses, as stated above. The Department Head has put significant emphasis on clear and timely communication with all aspects of faculty roles at the college.

- **Improve enforcement of prerequisites and correct placement of our students in our classes.**
  
  A subgroup was formed to work on this but little progress has been made as of May 2013. The principle challenge has been the huge effort that would be required to implement a placement system that adequately deals with a dozen mathematics courses largely populated by recent high school students and returning non-traditional students from all over West Michigan.
Goals for next year

1) Continue working to improve consistency of content and assessment throughout the mathematics curriculum.
2) Implement an enrollment cap for Ma 098 that more appropriately reflects its role as a key developmental gateway course for success in college and the workplace.
3) Make appropriate changes to the number of credit hours for Ma 108 and Ma 257.
4) Continue to improve enforcement of prerequisites and correct placement of students in mathematics courses.
5) Do all work necessary to showcase 100 years of Mathematics at GRJC/CC.

Internal collaborations and partnerships
N/A

External collaborations and partnerships
N/A

Departmental needs for support from other departments within the college
N/A

Program accreditation Updates
N/A

Description of departmental advising plan and outcomes
Following up on last summer’s discussions with Jennifer Batten, the Mathematics Department has been collaborating with the Physical Sciences Division on advising days. We set aside two days in each of the Fall and Winter semesters to meet with interested students in a convenient, advertised location in the Science Building. Results have been a bit disappointing. While the students who show up seem to benefit from their conversations with Mathematics faculty, the fact remains that very few students participate in these advising days. We will consider ways of improving the advising process, perhaps via the department webpage, timely in-class discussions, or both.

Student Achievements & Awards
The following students’ superlative scores on the national Student Mathematics League Competition earned them GRCC Mathematics Scholarships: Joshua Schwallier, Steven Johnson, Daniel Capodilupo, Jacqueline Bowman and Tien Tran. Joshua Schwallier’s performance was particularly noteworthy; he finished 5th in Michigan and 7th in the Midwest Region. The winner of the Theodora Quick Mathematics Scholarship was Alexander Templet.

Other department updates
We survived two moves in a ten-month period (for the DH it was three moves in eleven months) more or less intact. It would be a mistake to assume that this had no effect on our ability to get as much accomplished as we would have liked, especially in April.
Faculty & Staff

Departmental Professional Development Activities (Contractual Obligations for Departmental Faculty Development/6 hours)
All fulltime faculty attended the college-wide Learning Day Activities in each of the Fall and Winter semesters.

Faculty Professional Development Activities- Year End Summary
Many faculty, perhaps all, involve themselves in professional development activities that are under the radar. For example, many of us read professional journals, are actively but quietly involved in professional organizations, subscribe to and participate in professional listserves, read extensively on mathematics, the teaching of mathematics, the history of mathematics, etc., without having any concrete evidence to prove that these activities take place. Aside from that I can offer the following:

Shanna Goff, Monica Stevens, Yumi Watanabe and Colleen Copus attended MDEC (Michigan Developmental Education Consortium) Conference.

More than half a dozen Mathematics faculty attended the annual October MichMATYC Conference in Monroe Michigan.

Monica Stevens and Dom Mattone attended the ALEKS Next Steps workshop at Ferris State University.

Barb Bouthillier completed two courses at Ferris in the Masters of Curriculum and Instruction program.

Sara Main completed her MA in Mathematics Education from WMU.

To some extent all of these activities dealt with the teaching of developmental mathematics, and as such will have a positive impact on hundreds of students immediately and in the near future. Since those who participate in these activities share their knowledge with other faculty, the overall impact will grow with time.

Faculty Development Plans for Upcoming Year
We will deal with this on an as-needed basis.

EOL/Release Time Work
Nancy Forrest was granted one hour of EOL per semester to facilitate the New Faculty Orientation Day, and the New Faculty Institute. The purpose is to provide new faculty with the information, resources and support system that they need to excel in their faculty role.
Betsy McKinney was granted three hours of EOL per semester to coordinate Ma 098. This was Betsy’s second year as FT faculty, and she continues to oversee content, curriculum, textbook, technology (ALEKS) and assessment issues for Ma 098. Greater uniformity in classroom expectations and better communication among faculty continues, especially among our many adjunct. She continues to collect and interpret data that will be used to further improve student learning in Ma 098.

Andrea Hayes has finished her first year as Ma 107 coordinator and was able to accomplish much using just one hour of EOL, including data collection, data analysis and suggestions for greater uniformity in content delivery. In 2013-2014 Andrea will have more time for this important position and she looks forward to improve uniformity in content delivery, assessment and expectations of faculty who teach this course. It should be pointed out that in a given semester we may have 25 or more different faculty, mostly adjunct, teaching Ma 107.

Shanna Goff’s work as Ma 095/6/7 coordinator remains the standard by which the work of other coordinators is measured. Now that the machinery is largely in place and functioning well, Shanna has a bit more time to consider bigger issues, such as how to deliver the content of these course more effectively (e.g., use of ALEKS) and efficiently (e.g., reducing the time to get students through these courses in the hopes of raising their success rates).

Faculty & Staff Accomplishments/Awards

Shanna Goff attended the MichMATYC Conference in October and MDEC Conference in March. She received an IIPD Grant for attending the Advanced Kellogg Institute (Integrating Academic Support) in Summer 2013, and also served on the panel for the April Mathematics Seminar.

Monica Stevens attended the ALEKS Next Steps workshop at Ferris State University on April 19 and the MDEC Conference in Lansing on March 21 and 22. She is also in the process of becoming a DFC (Digital Faculty Consultant).

Alejandro Saldivar reviewed some activities for McGraw/Hill’s College Algebra text by Coburn. He also served and was re-elected to serve as math rep in the faculty council.

Yumi Watanabe presented at the January Mathematics Seminar and attended the MDEC Conference.

Mike Michaud was selected to grade the AP Calculus BC exam in June.

Colleen Copus presented at The MichMATYC Conference in October, attended the Michigan Tutorial Association Conference in October, attended the MDEC Conference in March and presented on “Tutoring Services” at the Adjunct Faculty Learning Day in February.
**Sara Main** completed her MA in Mathematics Education from WMU April 27, 2013 and was given two awards by WMU: Excellence in Teaching Award given by the Mathematics Department and nominated for All-University Teaching Excellence Award by a Graduate Student.

**Ryan Jones** reviewed the paper “Modular chromatic number of $C_{m}P_{n}$” for the journal Transactions in Combinatorics. He also had the paper “Hamiltonian-Colored Powers of Strong Digraphs” published by Discussions of Mathematical Graph Theory.

**Dan Garbowitz** coached two teams in the 9th/10th grade Math Challenge hosted by GRCC.

**Steve Harris** was awarded a graduate assistant position in the Mathematics Department at Western Michigan University beginning Fall 2013. He also presented an Excel application illustrating the Central Limit Theorem at the MCTM conference last summer.

**Betsy McKinney** completed Online-Hybrid Certification last summer and co-presented at the April Mathematics Seminar.

**Wayne Hsieh** completed two 600-level mathematics courses at GVSU and attended the Michigan sectional conference of the Mathematical Association of America at LSSU in May.

**Paul Nylaan** completed three courses through Villanova University (online), then passed the certification exam to become a Certified Professional in Business Intelligence (CPBI).

**Thais Itela** completed Disability Rights-FLD keynote training and CLS instruction Training. He plans to attend the INGeniOuS workshop in Washington this summer. He also passed the PhD proposal/comprehensive and was granted ABD status from the University of South Africa in Pretoria, and is currently writing his thesis.

**Nancy Forrest** served as a paired Reading Mentor in Fall 2012, created and coordinated the Mathematics Awareness Month Contest in Winter 2013, presented at the Teaching, Learning and Technology Showcase 3/20/2013, was a Math Challenge volunteer, attended the MichMATYC Conference in October, attended the MEC-CCA (engineering) meeting at WMU 10/19/2012, was given the GRCC Raider Nation Outstanding Faculty Award, attended CTE iClicker training 11/2/2012, was a member of the Distance Learning Faculty Advisory Board and the Athletic Advisory Board, served as Engineering Advisor, and volunteered as a Raider Golf Outing Scholarship fundraiser.

**Barb Bouthillier** collaborated with Colleen Copus and presented “The Internet: Distraction or Resource” at MichMATYC in October, did an in-service with Shanna Goff for GED math instructors, completed two courses at Ferris in the Masters of Curriculum and Instruction program, did several webinars on ADA compliance and accessibility, began serving on the
Faculty Leadership Steering Council for MCCA, served as a consultant to the ALEKS corporation to help improve the personalization of instructional resources, and served as faculty adviser to the new campus group InterVarsity Grand Rapids.

Oscar Neal completed a course in Investments which used probability and statistics to define expected returns on portfolios. He was a GRCC Math Challenge Grader, and also volunteered in the following capacities: tutor with Omega Psi Phi Fraternity, scout leader for Boy Scouts of America and classroom aid at Ada Vista Elementary Schools Spanish Immersion School.

Andrea Hayes co-presented at the April Mathematics Seminar and performed data collection and analysis for MA 095/6/7 for both Fall '12 and Winter '13.

Dom Mattone attended an ALEKS conference at Ferris State University, assisted at the GRCC Math Challenge in March 2013 and was a panel member for the April Mathematics Seminar.

Robert Bloye gave several lectures and presentations related to forestry and dendrology, and is working on various mathematics texts, an on-line course and a handbook.

Faculty & Staff Community Service
For over twenty years GRCC has hosted a regional Mathematics Competition for 9th and 10th grade students. In addition to helping out at the competition itself, usually held on a Saturday in March, faculty members devote many, many hours writing competition questions, creating competition activities, procuring and distributing food and prizes, etc. Thousands of local high school students have participated in this event. Faculty responsible for the success of this competition include Dana Sammons, Mike Steinfort, Nancy Forrest, Paul Hess, Julies Hess, Sang Lee, Dave Pruis, Jennifer Borrello, Curt Baragar, Oscar Neal, Betsy McKinney, Ryan Jones, Dom Mattone and John Dersch. And, of course, none of this would happen without the tireless efforts of our ESP, Kim Musser.

John Dersch, with the help of Sang Lee and Yumi Watanabe, ran the monthly Mathematics Seminars at GRCC. These are open to the greater GRCC community and the public is invited. Our speakers consisted of full-time faculty, adjunct faculty and former students. Presenters this year included John Dersch, Kelly Rozin, Patrick Campbell (former GRCC student, current GRCC tutor), Brian Hadley (former GRCC student, current WMU mathematics major), Yumi Watanabe, Sang Lee, Roger Berry, Betsy McKinney, Andrea Hayes, Shanna Goff, Linda Spoelman, Dom Mattone and Paul Miltgen.
Curriculum

Course Document (CARP) Updates completed this year
Ma 110, 124, 131, 134, 215 and 255 were completed this year. The plan for next year is to complete Ma 095/6/7, 098, 133, 138 and 210.

New Courses/Course Improvement Projects
In January we formed several subgroups that were charged with the task of improving aspects of specific courses or groups of courses. The list of issues and discussion items follows.
   a) Calculus curriculum – possibility of additional topics, consistency of topic coverage, number of credit hours for Ma 255 and Ma 257
   b) Statistics – guidelines for adjunct faculty, including use of technology
   c) Ma 107 and the transition to Ma 131 – should the content of Ma 107 be changed, should another course serve as a prerequisite for Ma 131
   d) Ma 108 – consistency of content coverage, number of credit hours
   e) On-line courses – testing on-line or at remote locations, pro or con; what to do if adjunct express an interest in teaching on-line courses
   f) Placement tests – for which courses are they needed, validity of existing tests

These projects are ongoing, with additional work and conclusive results expected in 2013-2014.

Assessment of Student Learning

Program Learning Outcome(s) assessed this year
The Department Learning Assessment Projects are outlined in the Program Review. Please see the attached.

Measures of Student Learning
These consist of doing Item Analysis of common final exams to identify learning gaps. Please see the attached.

Initial Data and Findings
These are included in the Program Review. Please see the attached.

Curricular or Pedagogical Changes Implemented
These are included in the Program Review. Please see the attached.

Data and Findings (post improvement/change)
These are included in the Program Review. Please see the attached.