## Gateways to Completion® MATH 1111 Course-Specific Report

Atlanta Metropolitan State College

11/20/2019

Section 1: Executive Summary

The Gateways to Completion (G2C) project aims to create and subsequently implement an evidence-based plan for improving student learning and success in high enrollment; high risk courses (i.e. courses with high DFWI rate). The process spans over three phases; phase 1. Analyze and Plan (self-study); phase 2. Act and Monitor (implementation); Phase 3. Act and Refine. For this year, the MATH 1111, MATH 1101 courses (Introduction to College Algebra and Mathematical Modeling, offered by the (Division of Science, Math and Health (SMHP) Profession) was selected to be the one under study. These courses are first-year gateway courses, taken by all students majoring in science, math, engineering, business, social science and humanities. It is an area A courses that transitions many of our students to matriculate into Core Curriculum requirements. Beside its high enrollment rate, it is found to be one of the top ten courses with high DFWI rate at Atlanta Metropolitan State College (AMSC). AMSC decided to improve our DFWI rate by joining G2C project which was an initiative of USG. AMSC decided to redesign English 1101, Math 1111, Math 1101, Pols 1101 and Acct 2101 as part of this G2C Project. A G2C committee was consequently formed, with the majority of its members coming from the Division of SMHP, Humanities and Fine Arts, Social Science, and Business. The committee played a pivotal role in both reflecting on the current situation and shaping the changes that are recommended to improve student success in the MATH 111, MATH 1101, POLS 1101, ENGLISH 1101, and ACCT 2101 courses. During phase I, the committee was responsible for evaluating the MATH 1111 and MATH 1101 courses in reference to seven principles, as defined by the John Gardner Institute for Excellence in Undergraduate Education (JNGI) in their G2C® process.

While it is evident that both the institution and the department that offers MATH 1111, 1101 show great commitment to improving student success through actions and policies, there are several areas that require further attention. The report in hand presents committee evaluation and findings in regard to seven principles; namely, academic policy and practice, faculty, improvement, learning, students and support. This is followed by proposed recommendations that were identified to either bridge an observed gap, or further enhance existing practices. It is anticipated that the impact of implementing these recommendations will not be limited to improving teaching and learning in the MATH 1111, 1101 courses only, rather, in other gateway courses as well as institutional-wide practices. As presented in the recommendations’ section, most of these implications relate to course delivery methods, institutional policies and practices, and faculty preparation and professional development. Key findings and recommendations are summarized as follows.

Key Findings:

* Some students are not attending classes or coming to class late.
* Early Assessment is not given in the first 3 weeks of classes to identify at risk students.
* Faculty should use more active learning strategies such as collaborative work so that learning takes place among peers.
* Faculty should have proper funding or resources to engage in faculty development.
* More formative assessment such as instant quizzes, group quizzes, and presentation of particular topic.
* Student who earn DFWI rate at midterm should be required to attend Center for Academic Services and Students Success Center (CASS).
* Increase CAAS personal such as student’s assistant to provide academic support services and peer to peer tutoring.
* Create and promote interdisciplinary learning communities and faculty should be able to collaborate with other USG institution to participate in the faculty development.
* Parents and Students should get information on specific skills needed to transition to college.
* Institution should have a college wide policy on Early Alert follow up.
* Banner should be programmed and updated.
* Math Department needs to meet once a month to discuss scheduling and other problems for better success.
* Discussions about DFWI rate and student retention should be a continuous effort throughout each academic year.
* Institution needs to offer summer bridge program for incoming freshmen to get them ready for gateway courses
* Institution needs new early alert system to address attendance, tardiness, and early intervention to identify at risk students.
* Institution needs a better registrar director who is knowledgeable about banner programming.
* Student affair recruitment representative needs to visit feeder schools in the area to give information on college readiness.

**Key Course and Institutional Recommendations:**

* Encourage faculty to continue assessing learning outcomes and focus on the key learning outcomes that will help students matriculate into upper level courses.
* Math faculty teaching gateway courses needs to provide immediate feedback to their students and require these students to attend CAAS to increase success.
* Identify specific learning outcomes from other core discipline courses to make sure that students in redesign course are learning specific course content. Faculty also needs to focus on deep learning of the subject matter.
* Faculty need to have a monthly meeting to discuss best practices, new pedagogy to improving student’s success in the gateway courses.
* Institution needs to provide proper funding to promote faculty development. All the Gateway faculty should be a part of Chancellor’s Learning Scholars.
* The course should be designed so that more faculty will give formative assessment such as instant quiz, collaborative learning, and presentation of particular subject topic. Gateway faculty needs to look into two stage exam.
* Gateway courses should put emphasis on deep learning to achieve better learning outcomes in the Cross-Discipline Courses. Redesign Courses should cover fewer topics to put emphasis on deep learning of Gateway Courses.
* Revitalize the Center of Excellence for Teaching and Learning (CETL) at AMSC.
* Create an academic research analyst or research associate to gather data, analyze, interpret, and share with faculty and staff regarding academic courses.
* Division should assign faculty to the course as well as Co-requisite lab.
* Institution needs to inform parent and high school for specific skills require to transition to College.
* Banner should be programmed and updated where classes can be linked to positively affect student success in gateway courses.
* Institution needs to offer more classes at different time to increase student enrollment and graduation rate.
* Students who are reported to early alert, should be given access to foundation course and assign them certain assignments based on their skill deficiency.
* Faculty should follow up with students who are not doing well in the course by using different tools such as test wrapper, student teacher conference etc...
* Institution needs to program advisement system banner in a way that will prevent students from taking classes that is not require for their majors. Institution needs to have advisement session to give them proper direction on registering for proper courses during orientation for incoming students.
* Institution needs to create a fix schedule for all incoming freshmen so that they will be registered into gateway courses in their first year. This will help students to become more successful in the second year core courses.

Section 2: MATH 1111 course-specific committee

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| **Name** | **Title** | **Committee Role** |
| Shreyas Desai | Assistant Professor of Mathematics | Liaison |
| Vance Gray | Dean, Social Sciences | Liaison |
| Kokila Ravi | Director of Online Learning and Specialized Programs | Liaison |
| Noel Whelchel | Instructor | Committee Member |
| Anthonia Ekwuocha | Assistant Professor of Mathematics | Committee Member |

Section 3: Narrative on General Situation and Findings of the Course-Specific Committee - By Principle Groupings

1. Learning

The “learning” principle aims to examine clarity and content of syllabi, learning outcomes, early and frequent feedback, supplemental support and common standards. Currently, Department of Mathematics has common course syllabi for Math 1111 and Math 1101 that is found to be clear and detailed enough. It articulates clearly the course description and its learning outcomes. Syllabi includes details related to Learning Resources and Textbook(s); Teaching Strategy; Assessment Strategy and Grading Assessment; Classroom Rules of Conduct; Academic Plagiarism Policy; Exams and Make up Policy; Attendance Policy; Communication Policy; Students Support and Learning Resources; Students protocol Policy; Course Contents and Schedule. The learning outcomes are also clearly articulated; however, the syllabus only includes outcomes that is assessed during the semester of which the course is offered. The listed learning outcomes content maybe modified based on the assessment. Institution has academic alert policy, which is implemented by most of our faculty to identify at risk students. Additional learning resources such as tutoring, handouts, workshop, computer labs, and advising are offered by Center for Academic Advisement and Success Services Center (CAAS). Some other student’s services such as Trio Program, counseling services, and financial assistants are being offered here at the AMSC.

1. Faculty/Instructor:

The “faculty” principle addresses aspects related to faculty selection, faculty engagement in improving student performance, professional development opportunities, faculty guide to academic assistance, use of best practices, assessment techniques, collaboration with student support staff, and reward for teaching. Currently, faculty are evaluated based on three principals. They are (1) Teaching (2) College and Community services and (3) Professional development. Students evaluation are given once a year to evaluate faculty performance in the class. Faculty are given merit based raise based on the annual faculty evaluation. Due to fiscal challenges, institution doesn’t have CETL department for faculty to engage in the professional development however faculty are finding opportunity to attend webinars, conferences, USG academy and individual research. Faculty are using meta-cognition strategies such as, wrappers, collaborative work, and presentation. Faculty are also using real life applications to motivate students to learn.

### Academic Policy and Practice

This principle aims to look closely at institutional and departmental policies and actions that help students succeed in gateway courses. This includes the use of placement tests, prerequisites, early warning, interventions to students who drop or fail the course, scheduling of faculty and sections and interdepartmental cooperation. All the incoming freshmen are placed into Gateway courses and Co-Requisite courses if they don’t take accuplacer exam. Institution also offer an option of CLEP exam to students who wants to exit gateway course to advance in their degree program. Students cannot register for certain classes until they are advised by their academic advisors to prevent students from taking classes that are not required for their degree program. Most of the faculty give early assessments at the beginning of the semester to identify at risk students so faculty can refer them for early intervention at CASS. Faculty also encourage at risk students to get some tutoring help either from faculty or CAAS tutors.

1. Improvement

The “improvement” principle aims to examine how “high-risk” courses are defined and monitored at AMSC, type of Professional Development (PD) sessions provided to instructors, how pedagogies and best practices are shared and utilized, and whether or not AMSC utilizes any externally developed instruments to better understand student and faculty performance. Findings are summarized as follows. Currently, all the faculty are submitting final grades to college. Institution had a division called institutional effectiveness (IE) which analyze and interpret the DFWI rate every year. Due to fiscal challenges, IE division is dissolved. The DFWI rate has not been shared with faculty until 2018 when we joined G2C project. Center for Teaching and Learning (CETL) was eliminated due to fiscal challenges at our institution. When it comes to faculty development, University system of Georgia (USG) offer opportunity such as Chancellor’s Learning Scholars, Co-Requisite Academy and other professional development opportunity. Due to limited funding, few faculty gets to attend such event. Every semester during faculty institute, Vice President of Academic office offer workshop and training to all faculty and staff. Occasionally, faculty in the inner department talk with other faculty to share best practices that worked in the classroom. Some of the faculty take advantage of webinars and research that is available online for individual faculty development.

1. Students

The “Students” principle addresses aspects related to monitoring student performance by demographics, offering support to different type of students and instructional environment, utilization of academic support and understanding the relationship of retention and student performance. Currently, student demographics are tracked through the Degree Works program. Also, there are programs for first year students and there is an office of counseling for students with disabilities which generate reports on their activities. The committee perceives a need that institution should share students’ performance based on age, income, full time/part time with the faculty so that the faculty shall develop appropriate teaching strategies that fit each students group. Special programs are offered for low-income students, veterans, and first-year students. There is a TRiO program offered to assist first generation students. The Office of Counseling and Disability services provides supports for students. Students receive a variety of accommodations for written assignments, face-to-face instruction, and online instruction through the Office of Counseling and Disability. These departments offer one-on-one tutoring, counseling and special locations for students to take examinations among other services. The committee perceives a need that the institution should continue to provide essential services to the students such as TRIO program, counselling and disability services, tutoring, workshops, and financial assistance. AMSC focuses on providing instruction that is responsive to the needs of students. Tutorial services are available to all students through the Center for Academic Advising and Success (CAAS). They also send personnel to the lab support classes to assist students who require remedial support. Academic support services are provided to all students every week day through the Center for Academic Advising and Success. Student should use the services and opportunities provided for them at CAAS. The committee noted that the center of academic success is doing a great job in tutoring the students. Some students are not aware of the services offered at the center. Faculty should continue to emphasis the services of the center to the students throughout each semester. The DFWI and retention rates are subjects of constant review and discussion. Reports on the DFWI and retention rates are regularly provided to the faculty at the faculty institutes at the beginning of each term. The committee recommends that the discussion and ways to improve DFWI Rate and Student Retention should be a continuous effort throughout each academic year. Active learning strategies are used in teaching of gateway courses. Students are engaged in lectures, discussions, and group work. They are encouraged to ask questions and use the support services. Assignments are given through online platforms like MathXL and information and additional learning resources are provided through Brightspace (D2L). Students work at their own pace in the online platforms through which most homework assignments are given. The online platforms use adaptive learning programs. Also, audio-visual presentations are often made using projectors in the classroom. Teaching strategies that help to improve students’ mindset should continue to be incorporated in teaching of gateway course.

1. Support

The “Support” principle aims to examine the provision and tracking of support services, early outreach, role of academic advisors, provision of Summer Bridge, and coordination between support efforts. Currently, students have all the resources available for them to be successful. Instructors do provide students with supplemental resources on D2L. Students are offered tutorial assistance and supplemental assistance through the Student Success Center. The committee believes we need more math tutors who can help us during support lab. Additional Students assistance can be hired through work study program to help faculty in the support lab. The supplemental instruction staff occasionally contacts faculty members to offer their assistance. Students’ progress is tracked by Center for Academic Success however, it is not reported to deans or faculty members of the division. The committee recommends that Center of Academic Success needs to distribute the data of student's attendance in the academic success center to all the faculty and deans. Moreover, Early Alerts are sent by faculty to Center of Academic Success Center (CASC). However due to fiscal challenges, CASC doesn't have enough staff to follow up with students who are not attending classes after midterm. The committee recommends that our college needs new Early Alert system that will notify CASC advisors if students miss classes or students are not doing well in the course. This way CASC advisors can talk with students to help them. Also, Academic Advisors are guiding students to take appropriate classes. However, sometimes students are taking gateway course at later time after 1 or 2 semesters.

CASC is urging students to meet with their academic advisors. CASC is doing as much as it can based on the current fiscal challenges. The committee recommends that the institution needs to have a hold on the banner so that students will have to take gateway courses in their first semester. This hold will also prevent students from taking higher level courses before taking prerequisite courses needed for these higher level courses. Currently, faculty are also doing advisement with larger number of students assigned to each faculty. Institution doesn't have a summer bridge program that will prepare students with the foundational skill needed to succeed in STEM courses. Due to fiscal challenges, institution doesn't have money to offer summer bridge program that will attract high school students from the area. Institution needs one person who is in charge of writing grant only to bring much needed fund to offer Summer Bridge Program for Math and Science courses. In addition, the syllabus for this course is being redesigned. Students are being advised properly to make sure that they pursue proper program of study. Advisors use Degree Works, student transcripts, and Guided Pathways to guide students. Students need to be advice during new student orientation to make sure that they are following appropriate sequences of courses. Math 1111 is a prerequisite course for Math 1113 and Math 2201 for Biology and Pre Engineering Major. It is also linked with courses such as Physics, Chemistry, Biology, Accounting, and Economics. Students are expected to learn specific learning objective that will help them matriculate to other core courses. Currently, institution is putting tremendous effort by offering additional resources that students can use including tutors, D2L Chat with CASC staff, handouts, supplemental course etc.

1. Guided Pathways/Curriculum Coherence

Guided pathways and curriculum coherence are straightforward concepts that, like the college- and/or university-specific curriculum and supports programs on which they draw, take on nuanced meanings in different institutional contexts. However, broadly, the notion of guided pathways and curriculum coherence efforts is simple. Institution is making sure that all the incoming freshmen take gateway math course in their first year to fulfill the requirement of Area A courses. Academic Advisors register student for 30 hours during their freshmen year to make sure that they graduate on time however some of our students are working students so they may not be able to attend college full time. Institution offer gateway courses for adult learner to accommodate them. Degree works which maps out the degree plan is used for on time graduation. Institution needs to program and update banner annually to make sure that students graduate on time. Currently, institution doesn’t enforce attendance policy and tardiness however some of the faculty does have attendance policy included in their grade assessment. CAAS does have a degree map for each major to make sure that incoming students take gateway courses in their first year of college. Currently, faculty is interacting with other faculty use of best practices in the classroom during faculty/staff institute and division meeting whenever possible. It appears that we may need to educate our students more about guided pathways during student orientation as well as First year Experience (FYEX) course.

Section 4: Recommendations for Action

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| KPI/Principals | RECOMMENDATION | ACTION | RESPONSIBLE UNIT |
| Learning | Attendance Policy | Attendance policy should be part of grading policy. | Faculty of Gateway courses |
| Faculty/Instructor | Faculty Professional Development | It is important that math faculty attend professional development regularly. The professional development will help them to be familiar with best teaching practices to engage and motivate our students. | Academic Affairs and SMHP Division |
| Faculty/Instructor | Active Learning | The course should be designed so that more faculty will give formative assessment such as instant quiz, collaborative learning, and presentation of particular subject topic. Gateway faculty needs to look into Two stage exam. | Faculty of Gateway courses |
| Improvement | Utilizing Existing Services in CAAS | (1) As a proactive strategy, students who are in learning support co-requisite labs should be referred to the Center for Academic Advising & Student Success (CAAS). (2) Students who earn DFWs in Math 1001, Math 1101, and Math 1111 should be referred to the CAAS after midterms. (3) Students who are failing the classes should be REQUIRED to use services in CAAS. | Faculty of Gateway courses and CAAS |
| Academic Policy and Practice | Faculty Intervention | Faculty should follow up with students who are not doing well in the course by using different tools such as test wrapper, student teacher conference etc... | Faculty of Gateway courses and CAAS |
| Students | Services to Students | The institution should continue to provide essential services to the students such TRIO program, counselling and disability services, tutoring, workshops, and financial assistance. | Academic Support Services |
| Students | Improvement of Students Mindset | Teaching strategies that help to improve students mindset should continue to be incorporated in teaching of gateway course. | Faculty of Gateway courses |
| Support | New Student Orientation | Students need to be advice during new student orientation to make sure that they are following appropriate sequences of courses. | Student Affairs and CAAS |
| Guided Pathways/Coherence | Identify at Risk Student | Faculty of the gateway courses needs to identify students who are at risk of failing in the first 3 weeks of semester and refer them to CAAS for early intervention. | Faculty of Gateway courses and CAAS |
| Guided Pathways/Coherence | Banner Programming | Institution needs to program advisement system banner in a way that will prevent students from taking classes that is not require for their majors. Institution needs to have advisement session to give them proper direction on registering for proper courses during orientation for incoming students. | Registrar’s Office, Student Affairs and CAAS |

Section 5: Sources of Evidence

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| **Doc #** | **Title** | **Course** | **Principles** | **Author** | **URL** |
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