Greetings! Below is a summary of some key policies, strategies, and changes that we thought you should be aware of and have as a reference for your advising sessions this summer.

**Math Placement**
Retention is a primary concern for all of us and success (or lack thereof) in a mathematics class has been shown to be directly related to whether or not a student persists in an intended major or even stays in school. Thus, it is very important to place a student appropriately in a math class. We do not want a student to struggle and get a C-, D, W, or F because we allowed the student into a class for which he or she wasn’t prepared. It is much better to start lower, succeed and strengthen the mathematical foundation, and be well prepared for the math, science, engineering, business, and/or statistics courses that are down the road. Please work with us to help place students in courses for which they are prepared and have a good chance of succeeding.

Based on the results of two studies, the Mathematics Department made some changes in the placement criteria. These modifications and other detailed information on the Mathematics Placement process are given in the hand-out, “Math Placement - An Overview.” You may also visit the website [http://www.math.wsu.edu/placement/welcome.php](http://www.math.wsu.edu/placement/welcome.php). During *Summer Alive*, questions can also be directed to either Jeanette Martin ([Martin@math.wsu.edu](mailto:Martin@math.wsu.edu), 5-4308) or Eric Remaley ([remaley@math.wsu.edu](mailto:remaley@math.wsu.edu), 5-2134). Either Jeanette or Eric will be present at every *Summer Alive* advising session and are quite willing to answer questions.

Many students are not satisfied with their Math Placement score and feel like they belong in a higher level course. Sometimes they’ve forgotten material they once knew and sometimes they genuinely know less than what they think they know. We’ve prepared a hand-out for students (“Greetings from the Mathematics Department!”) suggesting several options in case they want to work on their math skills this summer and re-take a placement exam later this summer. Both the WA Math Placement exam and the ALEKS Preparedness for Calculus will be offered during the Week of Welcome and the first week of the semester.
Gateway Courses
We identify some courses as gateway courses and others as terminal courses. **Gateway** courses are those that are critical for timely progression in a major. Examples include college algebra, precalculus, trigonometry, and calculus courses for engineering, science, math, and business majors. If students do not get into these courses, they are seriously set back in their program of study. On the other hand, **terminal** courses are courses that satisfy the quantitative literacy requirement, but can be taken anytime during the first two years of a student’s program of study without compromising progress. An example of such a course is Math 105, Exploring Mathematics, formerly, Math 210, Introduction to Mathematics.

The Mathematics Department guarantees that every student qualified for a gateway course will get into the course. This does not mean that the student will be able to get into any section he or she prefers, but that a seat will be found in one or more sections. The Mathematics Department has a plan that will allow for students at every Alive! session to have a choice of sections. (See Enrollment Management below.) However, if every section is filled to capacity, a seat may not open until the first week of class. If a student is in that position, and we do not anticipate this scenario, the student needs to come to the Math Department, Neill 103, and fill out a class request form. As soon as a spot opens, the student will be enrolled in the class and notified. This is not to be used for students wanting to change sections, it is only for students who are blocked out of every section because the classes are all at capacity. Seats always open up because, in spite of our best efforts, students register for classes without the proper prerequisites. Classes identified as gateway courses are: 106, 107, 108, 140, 171, 172, 201, 202, 216, 220, and 273.

Students trying to register for a terminal course may have to wait a semester if all sections are full. More sections of Math 105 (formerly Math 210) are offered spring semester than fall semester to help us balance teaching assignments.

Enrollment Management
Last year we made some modifications to insure that students at every Summer Alive session had choices for their math classes and that seats were available. The process worked well and we are continuing it this year with assistance from room scheduling. First of all, we are starting with plenty of sections to accommodate the incoming students. Before the Summer Alive sessions start, we will lower the enrollment cap for each section that is not reserved for Freshman Focus, then increase it incrementally before each session. (For example, suppose there are currently 16 students registered for Math 107-1 leaving 54 seats available. We would lower the limit to 16, then raise it by 5 before each Summer Alive session, effectively opening up 5 seats in that class for each session.) This worked well last summer to keep choices available for students throughout the summer. We also have some blinded sections held in reserve in case the enrollment indicates that we need to open even more seats.
Please make sure that any student eligible for a Freshman Focus section actually registers for that section. If the FF sections do not seem to be filling as the summer progresses, we may have to open them up to accommodate students trying to fit math into their schedule.

*We will monitor enrollment after each Summer Alive session and make adjustments if necessary.*

If you have questions or concerns, please contact Sandy Cooper, Associate Chair for Undergraduate Education ([scooper@math.wsu.edu](mailto:scooper@math.wsu.edu), 335-3134 or 335-4918).

*****New Alternate Precalculus Pathway*****

Precalculus is a gateway course into science, technology, engineering, and mathematics (STEM) majors, yet many students are unsuccessful in their first (or second or even third) attempt to pass it. This shatters the goals and ambitions of students and has serious implications in terms of retention. The reasons are complex and not easy to solve unless one is willing to lower standards and pass the problem up the pipeline. A research team consisting of faculty members and graduate students from the Mathematics Department and the Department of Teaching and Learning has been working on understanding why students struggle in these courses. The researchers gained valuable insights that suggested specific actions. What they found was that even when students placed into precalculus using the current placement system, the background of many of the students was too fragile to support the pace and rigor expected in the course. Secondly, the great variation in success across sections pointed to the critical role the instructor plays in the success of students. Several changes were made to address the findings.

- The placement criteria were modified (see “Math Placement: An Overview”).
- An alternate precalculus pathway was developed with built in “safety nets.”
- A new course was developed for graduate teaching assistants, Math 533, *Teaching College Mathematics*.

All three initiatives are in place for Fall 2009.

The alternate precalculus path consists of a two course sequence, and will have “safety nets” in place for both precalculus and calculus students.

- **Alternate precalculus sequence**- Students with weaker math backgrounds will be encouraged to take a two semester sequence Math 106, College Algebra (3 credits), and Math 108, Trigonometry (2 credits), rather than the one semester Math 107. Math 106 will be a prerequisite for Math 108. Another advantage of this two course sequence is that transfer students often have taken the equivalent of Math 106 and this will allow them to take trigonometry by itself.

- **Precalculus “safety net”**- A safety net is built in for Math 107 students by offering a late start Math 106 that will start the sixth week of the semester and will meet 5 days a week. With this in place a student who is failing Math 107 after the first exam will be able to transfer into a late start Math 106 and have a second chance to succeed in a mathematics class. Most sections of Math 106 will run the entire semester, but one or two late sections will be reserved for students at-risk of failing 107.
Calculus “safety net”- A Math 108 section will start the fifth week of the semester, will meet 3 days a week, and will be a safety net for some Math 171 students. Math 107 students will only be able to transfer into Math 106, not both Math 106 and Math 108 late start sections.

For more information, please see the Precalculus Options handout.

Support Courses and Study Halls
As a department, we provide several support structures for students in our entry-level classes. Two courses you should be aware of are Math 110 and Math 111. These are one-credit classes that support Math 107 and Math 201, respectively. The courses give individualized instruction focusing on what each student need help with. If you see students qualifying for either Math 107 or Math 201, but who are concerned about mathematics, please encourage them to sign up for one of these courses.

During the fall and spring semesters we also staff several different study halls with tutors. Encourage students to pay attention when these are announced in their classes and to take advantage of this service. E-tutoring is available 24 hours a day and will also be available to students.

Honors Calculus
An honors section of second semester calculus, Math 182, is taught fall semester and is an excellent opportunity for students entering with a strong math background to work with other well prepared students in a smaller class with an excellent instructor. Please keep an eye out for students eligible for this opportunity and encourage them to enroll. Class size is limited to 30 students and students need to be approved to enroll. While the class was designed for honors students, enrollment is NOT restricted to students from the Honors College. Any qualified student is encouraged to enroll. For students who are in the Honors College, it is an approved substitute for UH 290. Additional information will provided by the math advisors at the first Alive! session.

Student Handout
A student handout titled “Greetings from the Mathematics Department” addresses some questions students or their parents might have and to alert them to the availability of Honors Calculus. A copy is attached for your information.