

Access to Gateway Courses Subcommittee Final Report

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Charge to the Sub-Committee: *The "Access to Gateway Courses Subcommittee" was charged by the Provost to "review gateway courses and determine if students are having difficulties enrolling in required courses, and if yes, propose strategies for alleviating the pressures through a systematic process rather than through course-by-course 'deals.'"*

Executive Summary: Called together early in 2016, we have spent the better part of this year examining issues associated with access to gateway courses. For our purposes we defined gateway courses as large enrollment courses that are either prerequisites for other courses or required for an academic goal (e.g., pre-professional, majors, minors) by a certain stage in the student's academic career. We have found that from individual department administrative perspectives the process of enrolling students in gateway courses works well, dealing with excess student demand throughout the enrollment period and ultimately placing most/all students in the courses in which they seek to enroll. As typical of Cornell, we have also learned that each department handles the process differently, keeps track of information in different ways and that each approach does what it is intended to do, that is, manage student distribution between sections in gateway courses.

From a student perspective, however, the process may be stressful, uncertain, and complicated. While administrators see that students who try to enroll eventually get into a necessary gateway course, the student receives an initial message that he/she is closed out of a course, and faces uncertainties about whether a waitlist exists, how to navigate the process of being added to the waitlist, and how to know whether they will come off the waitlist (and when) and ultimately be able to enroll. The lack of a common, coherent communication system means that students experience a different process for each department or course, and are uncertain of the outcome until the enrollment is finally secured. This generates anxiety and stress.¹ Different gateway courses require different waitlist strategies and these courses are especially concentrated in the freshmen and sophomore years. Moreover different departments apply different gating criteria in terms of the order with which they admit students from the waitlist, and these strategies are not always apparent to students. Finally, different departments use different communication strategies with students.

To sum up our observations:

- Students have to learn and navigate multiple approaches to enrolling in high-demand courses and managing their waitlist status;
- Students are worried and frustrated when they find out they are "closed out" of a course when they try to enroll; this may be especially stressful for new students who have no

¹ It's also not clear how many students simply "give up" and either forego even trying to enroll in a course in the first place or, after they receive the "closed out" message give up without trying to pursue the waitlist option, given the mythology that exists regarding enrollment difficulties for some courses.

peers to consult to learn if this is “normal” and whether students “usually” get into courses or not;

- In most cases, students have no way of knowing their status on the waitlist or the likelihood of enrollment, so they don’t know if they should be pursuing back-up options;
- Cornell’s student information system, PeopleSoft, does not provide the flexibility to meet the various needs of the departments. And as a result there is no integration between PeopleSoft, where enrollment occurs, and department websites that help students manage enrollment in gateway courses;
- Although our investigations failed to find any instances of students being unable to enroll in a gateway course due to caps, some students were not enrolled until after the course had begun, and did not have access to on-line course materials while in waitlist status, thus being potentially behind the rest of the students by the time they get enrolled;
- Sometimes waitlists are used to balance loads across labs or other sections, where the department “knows” all students will be enrolled ultimately, but to the student it seems “uncertain” or “doubtful” that the student will be able to enroll in a section or lab;
- Based on the difficulty we had in collecting information about the use of waitlists and the outcomes for students (enrolled in course or not), departments using waitlists should keep better data to enable future monitoring for performance improvement;

To address the above observations, we have the following set of recommendations:

1) Develop a common student user interface or approach for registering in each gateway course: From a student perspective, the process should be seamless and uniform. There should be consistent forms of messaging in consistent places, and accessed in the same way, for all courses.

- a. Students should only need to learn one way to enroll in these gateway courses and to look for course information in the same place for each gateway course. How the information is used and what goes on behind the scenes remains up to the department, though there should be some level of transparency so students know the criteria for selecting students from the waitlist, and know where they are on the waitlist.
- b. Notes on the Class Roster could include a uniform location for each course to provide information about the waitlist.
- c. Communications to students should be more uniform, and should provide information about the likelihood of getting enrolled so the student can plan accordingly. Perhaps a generic note that says "you are on a waitlist, we understand it can be stressful, historically x% of students become registered within the first week." Texting this information to students should be considered.
- d. Students should be able to receive online course materials before they are enrolled if they are waitlisted, and while waitlisted they should have access to the information on the course Blackboard site.
- e. Rather than using a waitlist, departments should consider using permission numbers to control enrollment.

2) Collect and keep historic waitlist information to monitor the enrollment process.

- a. In assessing enrollment in gateway courses, we found that waitlists are generally not retained. It is therefore difficult to assess how many students have been waitlisted on an historical basis.
- b. If the waitlist is simply to create balanced labs, consideration should be given to letting

students register for the course so they feel confident they indeed are enrolled, and then later assigning each student to a specific lab/section.

3) Ensure good communication between gateway course providers and the departments using these courses.

- a. Information sharing about curricular changes (e.g., revised requirements of a major) or significant enrolment shifts (e.g., a college admitting more STEM majors) is essential to prevent the occasional hiccups in unexpectedly large and difficult to manage student numbers.
- b. The Associate Deans for Undergraduate Education should continue to monitor curricular changes and involve the DUSs of departments introducing new curricula to ensure information sharing, and the Associate Deans can signal if any significant enrollment shifts are anticipated. For example, the new Biomedical Engineering undergraduate program will have an effect on enrollment in several current gateway courses. We believe that appropriate planning for this is underway.
- c. Where possible have mechanisms in place to set up additional sections if, in an unusual case, a course is oversubscribed beyond the cap and the waitlist is not cleared.
- d. Consider alternative courses that can satisfy the gateway requirement, if a particular course routinely is unable to meet its waitlist capacity (this is expected to be a rare situation, and we did not identify any instances where this is needed at present).

Introduction: We began our process focused on the problem of students gaining access to gateway courses. As the sub-committee developed its thinking, in order to determine which courses should be the focus of attention, a definition was developed for gateway courses: "Courses that are either prerequisites for other courses or required for an academic goal (e.g., pre-professional, majors, minors) by a certain stage in the student's academic career. Gateway courses often serve the needs of students from multiple units or programs." The sub-committee learned that another committee (the Core Assessment Committee (CAC) under Laura Brown's leadership) had developed a list of "foundation courses". The CAC goal is quite different from the Gateway course sub-committee, but it had prepared a list of courses that was useful as we began our evaluations and this list served as the basis for identifying courses we eventually focused on. The CAC course list can be found as an attachment marked Foundation Course List. After several meetings we came to the conclusion that all or nearly all students did in fact get into gateway courses required by their majors, although the initial signals they received might indicate they were closed out. As the sub-committee met further we realized that perhaps the actual problem was the different approaches used by departments offering gateway courses and the lack of clear communication about enrollment status and likelihood of being enrolled soon if initially closed out of a course -- all resulting in confusion and uncertainty among students. We focused specifically on approaches to reduce confusion, anxiety, and uncertainty for students. This portion of the report describes our findings.

Enrollment in Gateway Courses: In order to assess the process of enrolling in gateway courses, we interviewed the DUS's and staff of several departments (Chemistry, Physics, Biology) who offer them. Brian Crane (Chem, DUS), Bonnie Comella (BIO), Cole Gilbert (BIO) and Jim Alexander (Phys, DUS) provided input on how gateway courses handle course enrollment.

Biology: There are three gateway courses (BIOEE1780, BIOMG1350 and BIOG1440) specifically designed for biology majors, but used as gateway courses. This past year a course

enrollment problem occurred because these are large classes with many small sections. With added funds, extra sections were created in the fall and spring to solve enrollment problems. It remains difficult to fully predict the course load each year and lines of communication between groups remain important. Premeds are a big group for biology and they affect course size planning but premed numbers are not readily predicted. These courses manage student numbers without a waitlist.

Physics: Gateway courses are PHYS1101/1102 (auto tutorial) and PHYS2207/2208. (It was noted that these course numbers are confusing since they have nothing to do with expected year of study but instead lay out sequence, i.e. 1XXX vs 2XXX,) Overall numbers seem to be stable. There is a cap on enrollment and students are added manually as overflow numbers with no waitlist. Attrition leads to numbers less than the cap.

Chemistry: Courses are CHEM2070/2080. Enrollment numbers are adjusted in the process. The interface with PeopleSoft as delivered is poor and is used to link to a waitlist website run by the Chemistry department. Students don't always know there is a waitlist or where to find it. It seems that all who remain on the waitlist can get into the course eventually and enrollment is stable. TA numbers are around 60; the college supports 42 and the rest are supported in various ways by the department. TA numbers are fixed so it might help if student advisors could help level the TA work load between fall and spring semesters.

Statistics: It is worth noting that statistics was discussed, described by Marty Wells, but it was concluded that while many majors may require these courses, they are generally offered across a number of departments in a range of course sizes (50-250) and therefore did not meet our definition of a gateway course.

Our conclusion was that students get into gateway courses if they need to, provided they have not given up. There was lengthy discussion of problems and alternative approaches. At present there is no systematic way waitlists are handled, how students are informed and how information is collected or stored. PeopleSoft software can be used to collect waitlists, but if specific information outside of the limited scope offered by the software is needed it cannot be obtained. As a result almost no department offering Gateway Courses makes use of PeopleSoft to collect information or to run a waitlist.

Examples of the process from other departments: In addition to interviewing representatives of the four departments above an email was sent to other departments offering gateway courses and the sub-committee obtained several responses that are summarized here.

Computer Science: During pre-enroll, CIS 4000 – 5000 level courses are reserved for CIS students only. There are waitlists for most 4000-6000 level courses through Faculty Center. These waitlists are managed during add/drop. Any student can add themselves to a waitlist and depending on how much room is left in the course, students are chosen based on need. CS strives to allow all seniors into their courses as they need it to graduate. Since CIS has an increasing number of majors/enrollment their process is always changing as they are continuously looking for ways to improve.

Sociology: Sociology offers three gateway courses: Introduction to Sociology (Soc 1101), Social Inequality (Soc 2208/DSOC2090/PAM2080), and Controversies About Inequality (Soc 2220 and 6 other different course numbers). There are two issues with access: One issue is that these courses have to be capped due to limited TA resources in the Department to staff discussion

sections. The current enrollment for Spring 2017 is brushing up against the cap, with about 300 pre-enrolled students. Soc 2220/Controversies is capped at 220 students, Soc 2208/Social Inequality at 240 students. Both courses regularly meet these caps, often before freshmen and sophomores pre-enroll.

Another issue is that there is no way, under the current enrollment management system, to give priority to students who need the course to fulfill graduation requirements for the Sociology Major or the Minor in Inequality Studies. The workaround is to close enrollment once the course is full, keep a waitlist of students who need the course to graduate, and manually add students off the waitlist as other students drop the course. It's also an imperfect system in that some students give up trying before a spot opens up, and then petition later for exemptions from the requirements.

AEM: In AEM, there are a select number of classes that are prerequisites and also required for the major. For most of those courses, the department teaches a course that is offered ONLY for AEM majors and then offers another course that is for non-AEM majors. There are about 3-4 of those classes for which they administratively pre-enroll the students into the class, and there is no waitlist. There are other courses that may be set up with preference given to AEM students only, or preference given to AEM students and non-AEM students can request enrollment or placement on the waitlist by contacting the professor. If, when the add/drop period opens at the beginning of a semester, there are seats open in a class that was open to AEM students only, then it is at the discretion of the professor who he/she allows into the class from the waitlist.

Development Sociology: DSOC 1101 Introduction to Sociology - All incoming freshman majors are pre-enrolled in this course in July of every year by the CALS Registrar's office as this is the gateway course to their major. The department does not keep a waitlist for the course or for the discussion sections.

DSOC 2010 Population Dynamics - This course is required for the DSoc major. Although not required for IARD and ILR majors, it is a popular choice for such students, who make up about 1/3 of each class. When the course fills up, it is locked and a waitlist is started and maintained by the undergraduate program coordinator. Students typically contact the instructor or the undergraduate program coordinator (via email or in person) to be put on the waitlist. Students are admitted to the course and given permission codes with which to enroll as space permits, with preference given to majors.

DSOC 2050 International Development - This course is required for the Development Sociology major, the Development Sociology minor and the Globalization, Ethnicity and Development Minor. Although not required, it is a popular choice for International Agriculture and Rural Development (IARD) and Environmental and Sustainability Sciences (ESS) majors who make up about 1/3 of each class. There is not much data to analyze yet, but as the popularity of the ESS major increases, there is an expectation that more ESS students will enroll in DSOC 2050. When the course fills up, it is locked and a waitlist is started and maintained by the undergraduate program coordinator. Students typically contact the instructor or the undergraduate program coordinator (via email or in person) to be put on the waitlist. Students are admitted to the course and given permission codes with which to enroll as space permits, with preference give to majors.

The enrollment process and how it is seen by students: After learning that the process works, we were fortunate enough to have a student member of the committee (Shayra Kamal) explain to us

from a student perspective the enrollment process for gateway courses. Student objectives are not only to get into required courses but also to get a balanced schedule and that is not a significant factor considered by the departments. In her anecdotes, she skirted a waitlist process by getting a permission number directly from a professor. If a student is smart they can sort out the process, but it is complex, unfriendly to students and different for each course. The sub-committee concluded that a review of the process was important, but also learned that no records were kept in most cases on waitlists or enrollment outcomes. After consulting with Marin Clarkberg and Cassie Dembosky, we elected to gather data using a student survey.

Gathering data and survey results: We undertook a survey of students who were likely to have enrolled late in a course and who were then likely to have been placed on a waitlist. The committee selected a group of gateway courses by looking at their stated enrollment caps, and how close they were to their enrollments after the semester was underway. (see the file Foundation Course Enrollments) We picked several courses that were near to their enrollment caps. The following is a summary of the questions and results of the survey taken in late September 2016.

Questions used in survey:

1. In registering for <this course>, did you encounter an enrollment cap, have to request special permission to register, and/or get placed on a waitlist? [Yes, No, if “No” then go to Q6]
2. Please rate the information provided to you when you weren’t immediately registered for the course.[No information was provided, Poor, Fair, Good, Very Good]
3. How long did it take for you to become officially registered in this course? [a day or less, 2-7 days, more than a week]
4. When you weren’t immediately registered for the course, how confident were you that you would eventually get in? [Not confident at all, Somewhat confident, Fairly confident, Quite sure]
5. To what extent was registering for <this course> a source of stress for you? [Not at all, Somewhat, Extensive]
6. If you would like to share other comments about your experience enrolling for <this course>, please use this space. [text box]

A summary of the survey results provided by Marin Clarkberg:

- Marin Clarkberg administered a very short survey to 243 students; about 60 in each of four classes (AEM 2100, BIOG 1440, BIOMG 1350, CS 1110). To maximize the chance that our sample included students who were waitlisted, the sample included just those students that were successfully enrolled after August 10th. Overall, 68% of the sampled students responded to this very short survey.
- In two classes, AEM 2100 and BIOMG 1350, very few students reported being waitlisted.
- In BIOG 1440, half of the respondents had been waitlisted. The percentage was even higher- 73% - in CS 1110.
- For these two classes with significant waitlist traffic, the quality of the information provided to students left something to be desired: in both cases, at least a third of the students felt that they did not receive good information about the waitlist.
- The waitlist moved more slowly on CS 1110 than for BIOG 1440. Nearly a third of CS 1110 students registering after August 10 remained on the waitlist longer than a week. CS1110 was the only course over the cap at the end of add, and was also a standout in the survey

results: more stressful to students and took longer to resolve.

- Few students on waitlists were "quite sure" they would get into the class eventually and only about a third of the students who were waitlisted were "fairly confident" they would successfully enroll.
- Being waitlisted is stressful; about a third of waitlisted students experienced "extensive" stress from the experience.