

# An Overview of Pre-requisites and Co-Requisites Course Requirements

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## **Introduction.**

Multiple courses at LaGuardia have pre-requisites or co-requisites that the student must comply with in order to enroll in the course. Pre-requisites and co-requisites are regularly maintained in CUNYfirst, and student registration is examined against these requirements. To date, there are 1,069 unique requirements maintained on CUNYfirst. This memo provides an initial mapping of the existing pre-requisites and co-requisites and outlines some future directions to examine them further.

## **The Value of Updated Pre and-Co-requisites.**

Pre-requisites and co-requisites allow the faculty to ensure that students are prepared for the coursework they wish to complete. Maintaining an up-to-date listing of pre-requisites and co-requisites allows the registration system to automatically capture departures from the pre or co-requisites, and handle exceptions or errors early in the process. In cases where pre or co-requisites are not up-to-date, the faculty must make multiple, manual adjustments to complete the students' registration. This results in additional burden on the student, faculty and registrar:

- (a) Students must apply for multiple waivers and exemptions to complete the registration
- (b) Faculty need to review and approve them on a case-by-case basis; and
- (c) The registrar needs to document and maintain them on the student record.

Furthermore, waivers, exemptions or substitutions to pathway courses may be declined by the senior colleges, especially if the student did not complete a degree at the college prior to the transfer.

## *An Illustrative Example.*

ENG 102 serves as a pre-requisite for multiple courses. Since Fall 2015, a total of 375 students took courses that requires ENG 102 as a single pre-requisite. Out of those students 15 percent (57 of out 375 students) did not complete ENG 102. Those students needed a manual adjustment to enroll in a course that require ENG 102 as a pre-requisite.

A manual adjustment involves a request form (filled out by the student), a review of the form for an approval or adjustment (by a faculty or advisor), and the update of the record by the registrar. The implication is that additional burden took place, and the student records may not be up to date. Indeed, out of the 57 students that did not meet the pre-requisites, 9 students appeared to receive a waiver or a substitution loaded to their record. The waivers loaded to CUNYfirst and DegreeWorks involved the time and resources of not fewer than 15 individuals-- four faculty and advisors (one at the Dean's level), two registrar staff members, and each of the nine students. In addition, 48 students to date do not have a record of a waiver or a substitution on CUNYfirst or DegreeWorks (It is possible that those records would be loaded only upon graduation). This pre-requisite appears to have a 15 percent exception rate. This rate may seem low, but it involves two exception processes- an override for registration, and an override of graduation requirements. As noted, senior colleges may decline exceptions that were employed to fulfill pathway requirements, especially if the student did not complete their associate degree prior to the transfer. There are courses with a higher exception rate.

## **Sample and definitions.**

The current memorandum began with a review of 1,069 unique pre and co-requisite groups entered into CUNYfirst. Pre and co-requisites are labeled in CUNYfirst as “Requirement Groups” or abbreviated as RQGROUP. The initial overview suggested that not all requirements are academic requirements. Of the 1,069 requirements in the system, 652 were excluded from the analysis as they reflected section-specific requirements and not course requirements (e.g. sections of learning community courses that have to be taken as a bundle). A total of 417 requirements were available for this sample.

### *The Typical Requirement Structure.*

Each requirement is maintained using a single requirement ID (RQGROUP). A requirement can consist of a single course or multiple course combinations. It may require a student to take one course or test prior to enrollment (hence, a pre-requisite), or it may permit a student to take the course (test) along with the enrollment in the course (hence, a co-requisite). A requirement may carry a combination of pre and co-requisites of courses (e.g. complete two courses prior to enrollment in the third course, and take a fourth course while enrolling in the third course).

## **Analysis Plan.**

In this analysis, an algorithm reviewed all downloaded requirements from CUNYfirst. Then, we further conducted a manual examination of the remaining requirements to address scenarios of multiple pre/co-requisites in a course. Requirements were mapped to determine if they are consisting of one or multiple requisites, and to determine if the requisite is a pre-requisite, co-requisite or combination of multiple requirements. All requirements were linked to course offerings from Fall 2015 onwards. (Requirements that were not linked to course offerings since Fall 2015 were excluded).

## **Initial Findings.**

Out of 622 courses offered from Fall 2015 onwards, 489 courses had a unique pre or co-requisite. Of those, 367 of the courses had pre-requisites, 29 had co-requisites, 79 had a combination of pre and co-requisites, and 14 courses had other requirements that are separately classified.

### *Pre-requisites (367):*

- (a) 105 courses carried a single, pre-requisite requirement (e.g. Completing ENG 101); In addition,
- (b) 69 courses carried a single pre-requisite that can be met in in *two or more* channels (e.g. completing CSE 095 or ENG 099);
- (c) 193 courses carried a pre-requisite that consisted of two or more requirements *where all requirements have to be met* (e.g. ENG 102 and ENG 103)

### *Co-requisites (29):*

- (a) 11 courses carried a single, co-requisite requirement; In addition,
- (b) 13 courses carried a single co-requisite that can be met in in *two or more* channels (e.g. enrollment in CSE 095 or ESL 097 along with the course);
- (c) 2 courses carried a co-requisite that consisted of two or more conditions *where all co-requisites have to be met* [e.g. Co-requisite of HSS 104 AND co-requisite of HSS 106 AND co-requisite of (HSS 214 or HSS 216) ]
- (d) 3 courses carried a co-requisite that combines course requirements and tests (co-requisite of ENG 099 and CSE 095 OR exemptions on the Reading and Writing tests)

*Other Requirement Combinations:*

- (a) 79 courses carry a combination of pre and co-requisites [e.g. Pre-requisite of MAC 101 AND co-requisite of (MAT 200 or MAT 241);
- (b) 14 requisites are not classified above (e.g. course enrollment requires major designation in Psychology)

Requirements that Apply to Multiple Courses:

A total of 48 requirements applied to more than one course (e.g. ENG 102 serves a single, pre-requisite for seven courses). Maintaining an identical requirement ID to multiple courses is a common practice; it simplifies the maintenance and updates of pre and co-requisites for multiple courses at once.

Duplicated Requirements Entered on CUNYfirst:

At least 12 pre and co-requisites are maintained in duplicated formats. Any requisite is maintained using a unique requirement group ID. A requirement group ID may apply to one course, or to multiple courses. If a requirement is identical to several courses, all courses should maintain the same requirement ID. Duplicated IDs require the faculty and the registrar to update and maintain the same requirement in multiple channels, increasing both processing times and the likelihood of curricular errors to take place. In the initial review, duplicated requirements were found (e.g. requirement IDs 028955 and 028515 are both pre-requisites that consist of the same courses with identical conditions- ENG 101 and HUC 101 and HUC 106).

Requirements that may require a revisit or update:

Some requirements are not up-to-date as courses or the means to complete the requirements have changed. By lieu of example, a student may complete MAT 120 through enrollment in MAT 119. However, this change was not entered to all pre-requisites. The implication is that a student will require a manual adjustment to enroll in a course where the pre-requisite is not up-to-date. At the same time, some courses require MAT 120 as a co-requisite. Such requirement implies that a student should be college-level ready at math, but may take the foundation course concurrently. In such case, it is crucial to update the system so that a student cannot take MAT 119 as a co-requisite.

**Implications.**

The current status of pre and co-requisites' maintenance results in a notable burden on the faculty, advisors and students during the registration process. An ad-hoc review of all courses' pre and co-requisites will be necessary to determine whether the requirements entered into the system are up-to-date and reflect the academic preparation requirements. Such review and update will greatly reduce the workload on faculty's waivers, exemptions and substitutions; reduce the registration burden on the students; and increase the transferability of courses through pathways.

Once all pre and co-requisites are reviewed, we suggest establishing a process in which all requirements for courses that have been added/modified are reviewed on an annual basis to ensure accuracy. An overhaul review of all pre and co-requisites can take place during each program's five-year review. This process would not add an additional burden, but can be embedded into the common curriculum review process.

**Future Directions.**

Upon completion of the pre and co-requisites review, we will be able to assess the compliance rate of students with pre and co-requisites, as well as the student outcomes in relations to the requisites specified.