**ASC Focus Group Report: Mathematics**

*Conducted on 04-03-2015. Present: Niaz Ali Khan (moderator), secretary: Vincent Gerez (secretary); fellow: prof. dr. Christiane de Morais Smith (fellow), and 11 students, all science majors across a variety of majors and tracks.*

**Introduction:** As is the case each year, focus groups were organized to report the status of the tracks in the science department. Students had much to say about every course in the Mathematics track, resulting in many action points to follow up on.

**The Zero Levels:**

Math for Poets: The course is listed on Osiris as a viable replacement for Foundations of Mathematics, which students say it isn’t. The students in the course are divided into the categories of those who a) take it as a science requirement, and for them too difficult and b) take it as a replacement for Foundations, who would not recommend this. There was discontent expressed over the name of the course, whereby it was stated that the name can mislead the student into thinking the course is particularly easy, which is not the case.

Math for Liberal Arts and Sciences: The course itself has no problems per se with the content, which does its job of patching up knowledge perhaps not gained in high school. It’s listed as a prerequisite option for the level 100 Physics courses, which students suggest should not be the case (they recommend at least Calculus 100).

**The Track:**

Calculus: Students had mixed feelings about whether or not the transition from high school mathematics to this course was smooth. This may be due to the inconsistencies in teaching and testing which was discovered: students in separate groups reported significant differences between them, such as the level of difficulty or exams and assignments, the frequency of the assignments, and the existence of presentations. The fellow suggested a unified examination to alleviate this issue.

Foundations of Mathematics: Students found this course to be crucial towards following a Mathematics track, and reported discontent over its availability only in the fall semester. The fellow stated that this was due to logistical reasons, and is intended to open up the possibility of taking the many courses which rely on this as a prerequisite as early as possible. The suggested solution is to guide tutors that they should point students interested in Mathematics towards this course from the very start of their UCU career.

The level 200s: Both of these courses were said to build on Calculus 100. Mathematical Methods was said to be a true ‘sequel’ to calculus, and students said that they would like to see more ‘proofs’ as a part of the course content. Networks was said to be more of a self-contained course which needs calculus as a prerequisite but does not necessarily build on it. Students expressed frustration that both these courses seem to be ‘dead-ends’ with no real sequel, as in their opinion the level 300 builds mostly on Foundations, leading to a ‘V-shaped’ sub-track of Calculus 100 followed by MAT21 and 22, and Foundations followed by the 300. The fellow explained that this is to broaden student options by allowing them to use off-campus courses as track finishers. A suggestion, again, is to make this information available to tutors, so they can better guide their students in the matter.

Advanced Mathematics: Students expressed that the course material was a bit unexpected, but the course was doable overall, with the teaching been done quite well. There was evident discontent over this course being the only way to finish the Mathematics track at UCU, and there was much demand for more level 300 courses. The fellow stated that while this is not logistically possible, other level 300 equivalents at the UU are an intended, viable, and recommended option. Students stated once more that Foundations of Mathematics is essential to taking this 300 level course and starting their UU courses early enough (which may even interfere with credit requirements for certain Master’s Programs), so missing it in their first semester is quite a hassle and expressed enthusiasm at the idea of tutors better informing their first semester students about Foundations of Math.

**Lab courses:**

Students stated that the lab courses differ vastly in how much they teach and how they teach it. MATL4 was stated to be far easier than MAT L3: very little was said to be taught, and the grading was very lenient. MATL3 was stated to be the exact opposite, where more was learned but much more was also demanded. In general, students wanted more lab courses and expressed much enthusiasm at the idea of replacing one of the summer/winter blocks the current courses occupy with possible new courses (suggested by the fellow) in order to create a more diverse Math curriculum.

**Suggestions:**

* Different groups of calculus need a certain degree of standardization in assessment. All groups taking the same exam is a solution for the problem.
* Tutors should be better aware of the prerequisite courses which provide easier transition into Physics courses or higher levels.
* Furthermore, students showing even the smallest interest in a Math track should be directed towards Foundations of Mathematics from the beginning of their course, so that they do not have to wait till the second year to gain the crucial knowledge which their other courses will build up on.
* Students should be told of the possibility (and necessity) of off-campus courses to supplement their Mathematics tracks.

**Conclusion:**

Much was discussed, and although there were some dissatisfactions, all students seemed satisfied with the action points which the discussion brought forth.