General Studies Math Assessment Results (Fall 2014):

In accordance with the long-term assessment plan for General Studies Program, Math courses were assessed in Fall 2014. A total of 244 responses were received.

Assessment of General Studies Math courses is implemented according to the process developed by the Math Department. The assessment instrument consists of 5 questions selected by the faculty teaching the selected courses and administered as part of the Final Exam. Student performance data for each question is provided to the Department's Assessment Committee; this information is summarized and reported to the Department and to the Director of General Studies.

The Math Department's Assessment Committee summary report is presented in Table 1. The Math Department has determined that when the course average is below 60% on a specific question, the Assessment Committee will formulate an action plan that addresses the deficiencies. As reported in Table 1, the goal of average score of 60% or better on each question was achieved. Thus, the Math Department's established benchmarks for each of the five questions were met.

The General Studies Council determined in October 2015 that students in general studies courses should meet the standard of at least 70% of students achieving Proficient and Advanced for each identified learning outcome (both category and program level), where "Proficient" describes the skills of the typical student near the end of the course and "Advanced" is anything above proficient.

For assessment of General Studies, the summary results (Table 1) were re-tabulated to reflect performance on each General Studies Math learning outcome (MO) on a percentage basis using the following procedure. First, the responses for each applicable question were summed by category; that sum was then divided by the total responses to obtain the percentage. For example, MO1 is measured by each of the five questions on the instrument; thus the 18.36% Proficient for MO 1 (reported in Table 2) is found dividing the sum of "Proficient" responses for each of the five questions (224) by the sum of the total responses for the five questions (1,220). MO2 is measured by questions 2 and 3; thus the 19.67% Proficient for MO 2 (reported in Table 2) is found dividing the sum of "Proficient" responses for questions 2 and 3 (96) by the sum of the total responses for the two questions (488). This process was followed for each MO and the results are reported in Table 2.

The assessment results for General Studies MO are reported in Table 2. As shown in the last column of Table 2, only MO 6 - use mathematical software effectively met the goal of 70% Proficient and Advanced; the goal of 70% Proficient and Advanced was not met for the following learning outcomes: MO 1 – apply mathematical logic to solve equations (68.1%); MO 2 – describe problems using mathematical language (66.8%); MO 3 – solve problems given in mathematical language using mathematical and statistical tools (67.5%); MO 4 – interpret numerical data or graphical information using mathematical concepts and methods (68.0%); and MO 5 – construct logical arguments using mathematical language and concepts (68.3%). Although the 70% goal was not met on MO 1 – MO5, closer examination of the results indicated that over 65% of the responses fall within the Proficient and Advanced categories and further, the majority of the responses fall under "Advanced." Given these results, the General Studies Council may re-examine the established benchmark and/or rubric.

The results reported above indicate the 70% goal established by General Studies was only met for one of the learning outcomes. As mentioned earlier, although the initial 70% goal was not reached for five of the learning outcomes (MO 1 – MO 5), the majority of the responses are at or above "Proficient." In addition, it should be recognized that the results reported above are from the first-time data collection in the General Studies assessment cycle. Thus, the results should be considered as the first step in determining the base-line for achievement of the learning outcomes. As more data become available, recommendations for any potential changes can be made. Thus, the results should be considered the first step in determining the base-line for achievement of the learning outcomes. As more data become available, recommendations for any potential changes can be made

Table 1. Math Assessment Summary Results and Average Score by Question[/1] (N = 244 students).

	Learning Outcomes Measured	Does Not Meet Criteria (0-19%)	Beginning (20-39%)	Developing (40-59%)	Proficient (60-79%)	Advanced (80-100%)	***Average Score (%)***
Question 1	1, 3, 5, 6	10	17	26	49	142	***75.8***
Question 2	1, 2, 3, 4, 5, 6	14	23	40	50	117	***69.3***
Question 3	1, 2, 3, 4	17	16	52	46	113	***72.5***
Question 4	1, 3, 5	38	27	37	28	114	***63.8***
Question 5	1, 4	21	13	38	51	121	***71.4***

[/1]Information provided by the Math Department.

Table 2. GS Math Assessment Results for Fall 2014[/2] (Percent of Total Responses by GS Math Learning Outcomes).

Math Learning Outcome (MO):	Does not meet	Beginning	Developing	Proficient	Advanced	***Proficient and Advanced***
MO 1: *Apply mathematical logic to solve equations.*	8.20	7.87	15.82	18.36	49.75	***68.11***
MO 2: *Describe problems using mathematical language.*	6.35	7.99	18.85	19.67	47.13	***66.80***
MO 3: *Solve problems given in mathematical language using mathematical or statistical tools.*	8.09	8.50	15.88	17.73	49.80	***67.52***
MO 4: *Interpret numerical data or graphical information using mathematical concepts and methods.*	7.10	7.10	17.76	20.08	47.95	***68.03***
MO 5: *Construct logical arguments using mathematical language and concepts.*	8.47	9.15	14.07	17.35	50.96	***68.31***
MO 6: *Use mathematical software effectively*.	4.92	8.20	13.52	20.29	53.07	***73.36***

[/2] Summary results from Table 1 were re-tabulated to reflect performance on each General Studies MO on a percentage basis. For example, MO1 is measured by each of the five questions on the instrument; thus the 18.36% Proficient for MO 1 is found dividing the total (224) "Proficient" responses for each of the five questions by the sum of the total responses (1,220) for the five questions [i.e., 18.36% = (49 + 50 + 46 + 28 + 51) ÷ (5 × 244)]. The same procedure was followed for each MO.