FOOTHILL COLLEGE
Institutional Research and Planning

DATE: July 30, 2013

TO: Peter Murray, Division Dean, Physical Sciences, Mathematics & Engineering

FROM: Elaine Kuo, College Researcher
Thomas Margesson, Student Assistant

RE: Math Experiences Survey Results

Overview

The Math Experiences Survey was administered to gather data on students' experiences in Foothill's college-level math courses, and to document those who are transferring to pursue a STEM major at four-year colleges or universities. The survey was sent out to all students who were enrolled in a college-level math course for the 2012-2013 academic year and received a final grade or were currently enrolled during the spring quarter. Of the 3739 students who received an email invite to participate in the survey, 1100 students completed the survey for a response rate of 29%.

Demographics:

- Asians represent the largest percentage of survey respondents at 41%, followed by White (26%) and Latino students (14%). Asian students also account for about half of the STEM transfers who responded to this survey (53%). Whites and Latinos account for almost another one-third (23% and 6%) of the STEM transfer students.

- Half of the students responding to the survey were female (51%). Males, however, account for nearly two-thirds of STEM transfer students (64%).

- Nearly one-quarter of the survey respondents were 19 years old or younger, while the majority of students were between the ages of 20 and 24 (53%). This same age group (20-24) also represents nearly two-thirds of STEM transfer students as well (66%).

Experiences Highlights:

- For students who received or expected to receive an A- or above for their most recent math class at Foothill, 44% spent 6 hours or more per week on math homework while 58% felt they needed to spend 6 hours or more to get the grade they wanted.

- For students who received or expected to receive between a C+ and C- for their most recent math class at Foothill, 51% spent 6 hours or more per week on math homework while 86% felt they needed to spend 6 hours or more to get the grade they wanted.

- Of all the students who worked at least 20 hours per week for pay, 25% (69 students) expected to receive an A- or above and 19% (51 students) expected to receive between a C+ and C- in their most recent math class.

- 89% of students whose previous math class was less than a year ago expected to receive a passing grade in their most recent math class. Of the students with more than a year between math classes, 92% expected or received a passing grade in their most recent math class.

Transfer Highlights:

- Overall, of the 1100 students who responded to the survey, 397 (36%) plan to transfer to a four-year college or university this coming fall. Out of the 397 students who will be transferring this fall, 158 will be pursuing a STEM major (40%).

- Out of the 158 STEM major transfer students, 86 will be heading off to the UC system (54%), 42 to the CSU system (27%) and 24 to in-state privates/out-of-state institutions (15%). An additional 6 students (4%) who are transferring in STEM are still undecided about which institution they will be attending.

- The top transfer institutions among students pursuing a STEM major are: San Jose State University (17%), UC Berkeley (15%), UC Davis (15%), UCSD (8%) and UCLA (8%). These five destinations represent about 60% of the colleges/universities that the STEM majors will be attending.

- The top five STEM majors that students will be pursuing are: 1) Biological Sciences (includes conservation biology, neuroscience, & wildlife and conservation biology) (17%), Computer Science (includes software engineering) (16%), Mathematics (includes applied math) (13%), Mechanical Engineering (includes motorsports engineering) (9%), Statistics (6%), and Chemistry (6%).

- Among students pursuing a STEM major, about one-third applied to more than five institutions (32%) and almost one-fifth applied to just one (17%).

- Almost one-third of students pursuing a STEM major reported being accepted by one institution (32%), while one-quarter were accepted at three institutions (23%).

Methodology

Survey participants were identified if they enrolled in a college-level math course during Fall 2012, Winter 2013 or Spring 2013. College-level math includes MATH 1A, 1B, 1C, 1D, 2A, 2B, 2C, 10, 11, 12, 22, 42, 44, 48A, 48B, 48C, 57. Students enrolled in Fall 2012 or Winter 2013 were invited to participate if they received a final grade in their math course. All students who were enrolled in Spring 2013, as of June 7, 2013, were also invited to participate. Students were sent an email invite with the survey link embedded. Using a one-time encrypted password, students could access the survey submit their responses one time only. The survey was open from June 18 to June 27. Students were sent a reminder email to participate on June 25.

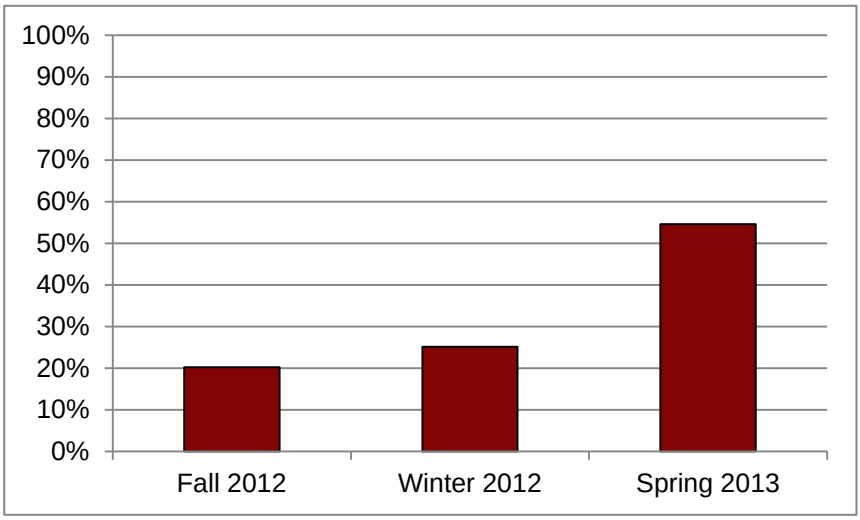
Source

Foothill IR&P- 2013 Math Assessment Survey

2013 Math Assement Survey Results

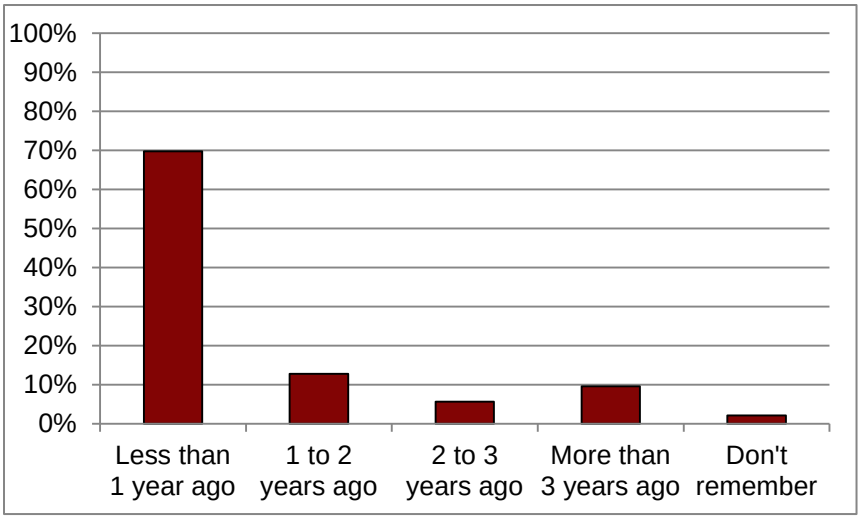
1. When were you enrolled in your most recent Foothill math course?

Response	N	%
Fall 2012 (two quarters ago)	222	20%
Winter 2012 (last quarter)	276	25%
Spring 2013 (this quarter)	600	55%
Total	1098	100%



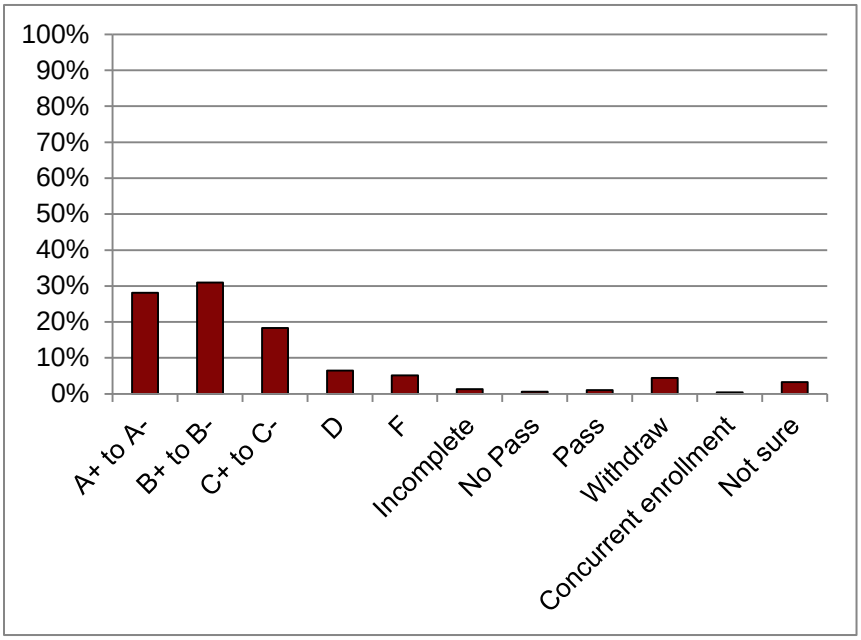
2. Before you enrolled in your most recent Foothill math course, when was the last time you enrolled in any math course?

Response	N	%
Less than 1 year ago	764	70%
Between 1 to 2 years ago	140	13%
Between 2 to 3 years ago	62	6%
More than 3 years ago	105	10%
Don't remember	24	2%
Total	1095	100%



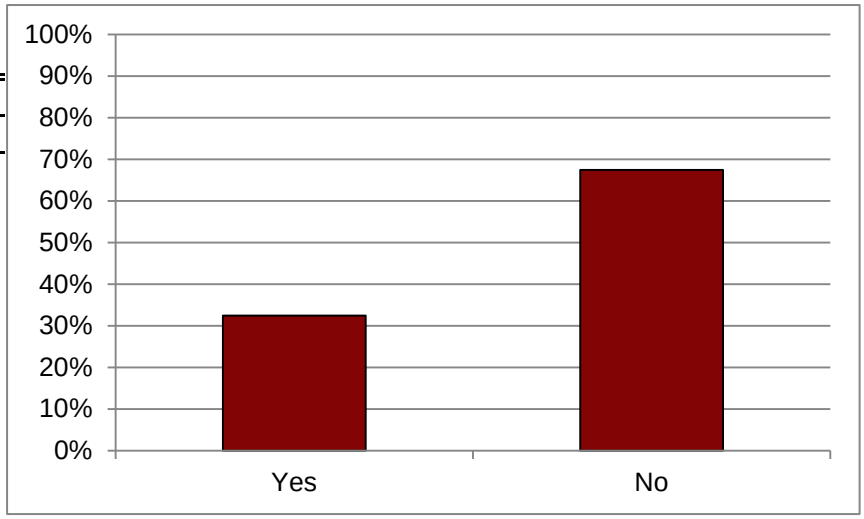
3. What grade did you receive in that math class?

Response	N	%
A+ to A-	307	28%
B+ to B-	337	31%
C+ to C-	205	19%
D	70	6%
F	57	5%
Incomplete	14	1%
No Pass	6	1%
Pass	12	1%
Withdraw	49	4%
Was concurrently enrolled in more than one math class	5	0%
Not sure/Can't remember	36	3%
Total	1098	100%



4. Did you take any math classes at <u>ANOTHER COLLEGE</u> before enrolling in a Foothill math course?

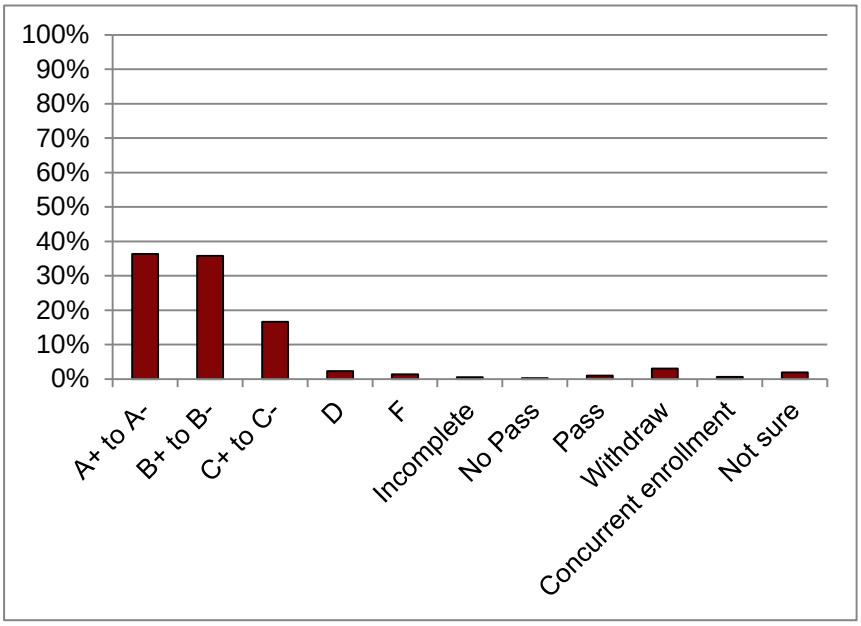
Response	N	%
Yes	356	33%
No	739	67%
Total	1095	100%



Questions 5-9 refer to the quarter you were enrolled in your most recent Foothill math class (Either Fall 2012, Winter 2013 or Spring 2013).

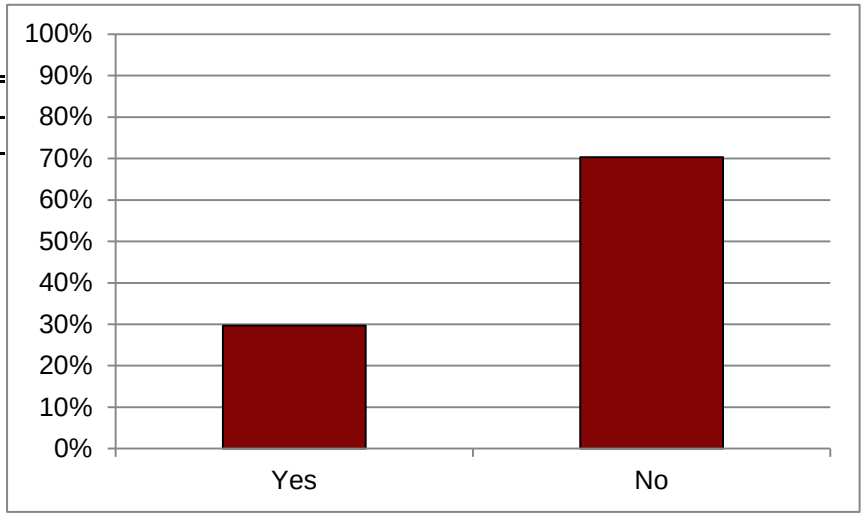
5. What grade <u>DID YOU RECEIVE OR EXPECT TO RECEIVE</u> in your most recent Foothill math class?

Response	N	%
A+ to A-	396	36%
B+ to B-	396	36%
C+ to C-	181	16%
D	25	2%
F	16	1%
Incomplete	6	1%
No Pass	3	0%
Pass	11	1%
Withdraw	35	3%
Was concurrently enrolled in more than one math class	7	1%
Not sure/Can't remember	23	2%
Total	1099	100%



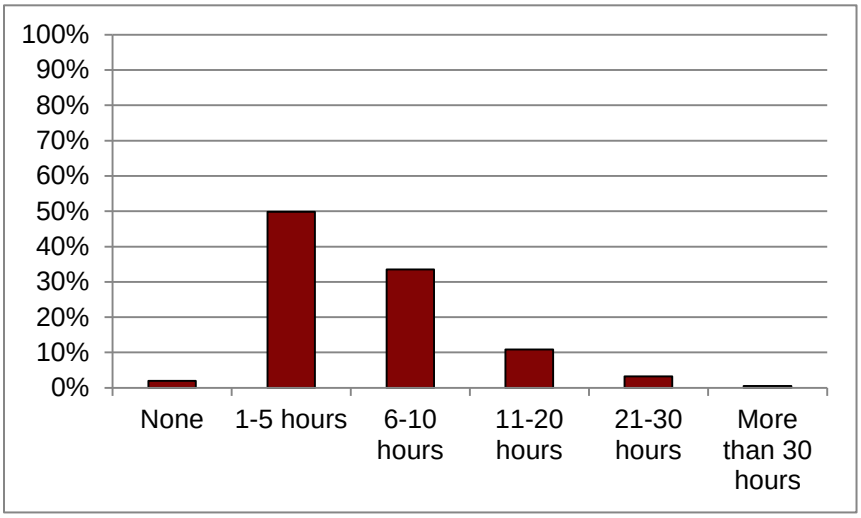
6. Did you attend any of the PSME Center workshops when enrolled in a Foothill math course?

Response	N	%
Yes	326	30%
No	771	70%
Total	1097	100%



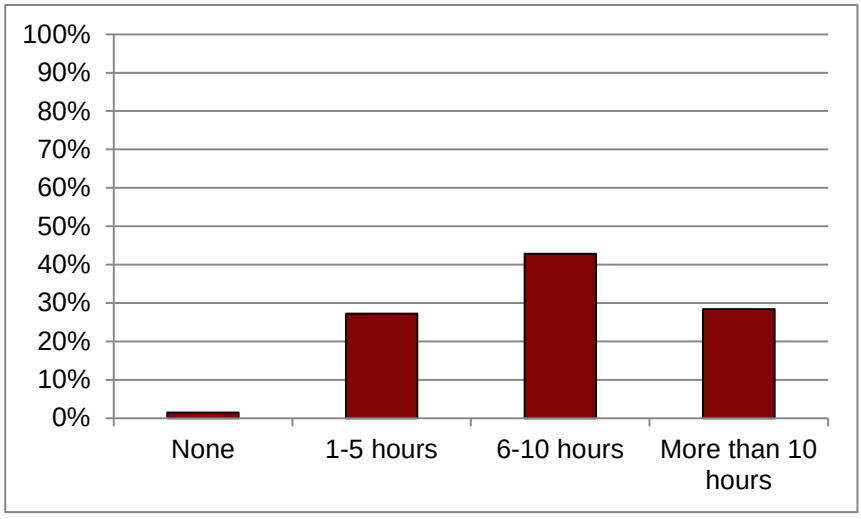
7. How many hours per week (on average) DID YOU SPEND on math homework outside of class?

Response	N	%
None	22	2%
1-5 hours	548	50%
6-10 hours	368	33%
11-20 hours	119	11%
21-30 hours	36	3%
More than 30 hours	6	1%
Total	1099	100%



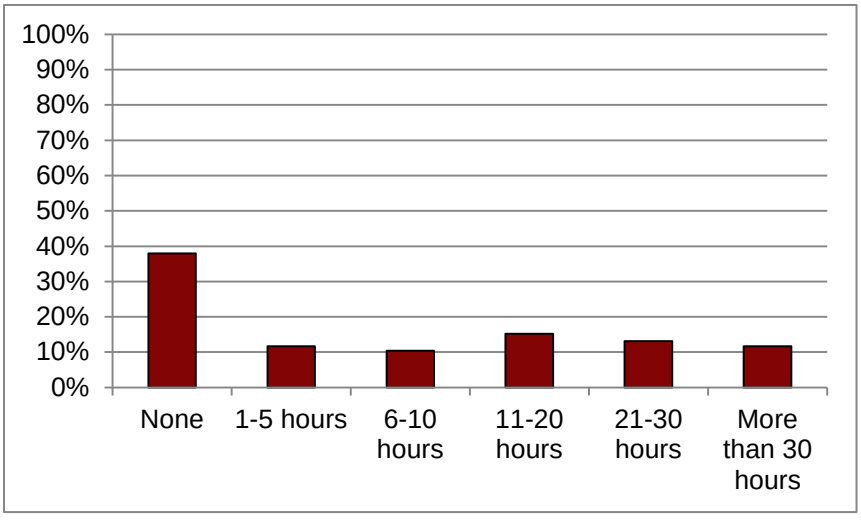
8. How many hours per week (on average) DID YOU THINK you needed to spend on math outside of class to get the grade you wanted?

Response	N	%
None	16	1%
1-5 hours	299	27%
6-10 hours	470	43%
More than 10 hours	312	28%
Total	1097	100%



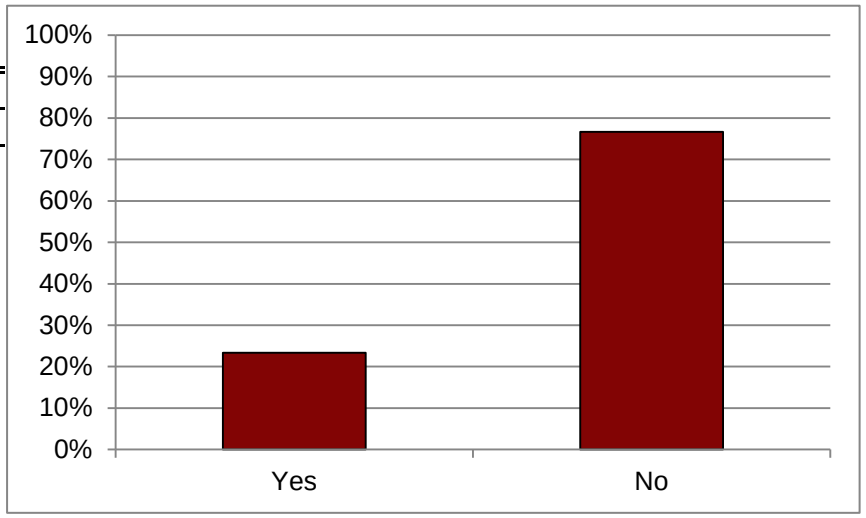
9. While you were taking your most recent Foothill math class, how many hours per week (on average) did you work for pay?

Response	N	%
None	416	38%
1-5 hours	128	12%
6-10 hours	114	10%
11-20 hours	167	15%
21-30 hours	144	13%
More than 30 hours	128	12%
Total	1097	100%



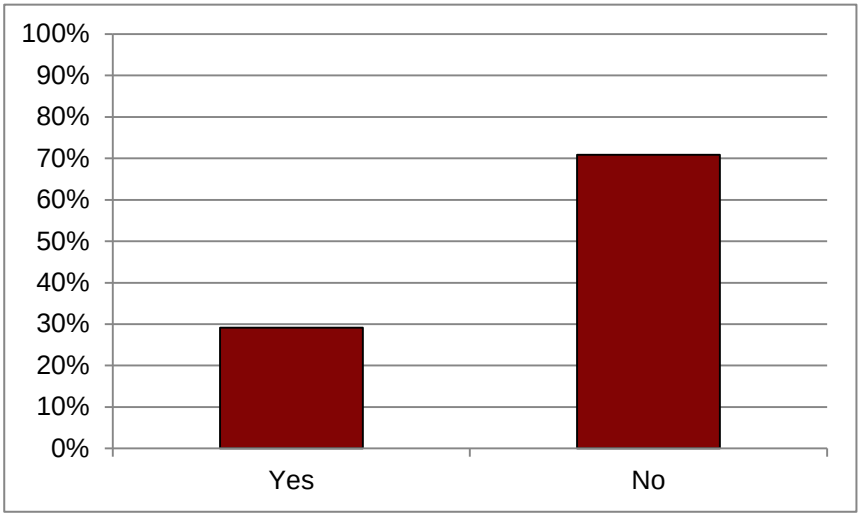
10. Did you receive financial aid this academic year?

Response	N	%
Yes	257	23%
No	843	77%
Total	1100	100%



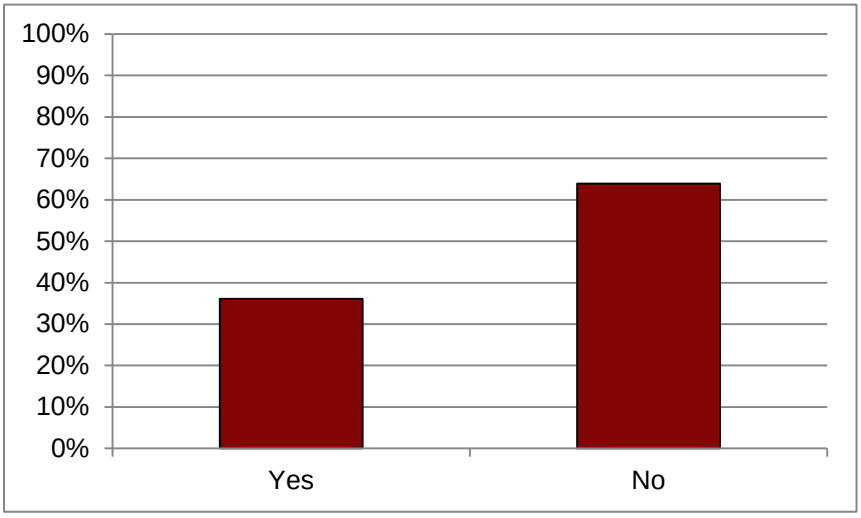
11. Are you an international student?

Response	N	%
Yes	319	29%
No	775	71%
Total	1094	100%



12. Will you be transferring to a 4- year college or university this fall?

Response	N	%
Yes	397	36%
No	703	64%
Total	1100	100%



13. Which 4- year college of university will you be transferring to in the coming academic year?

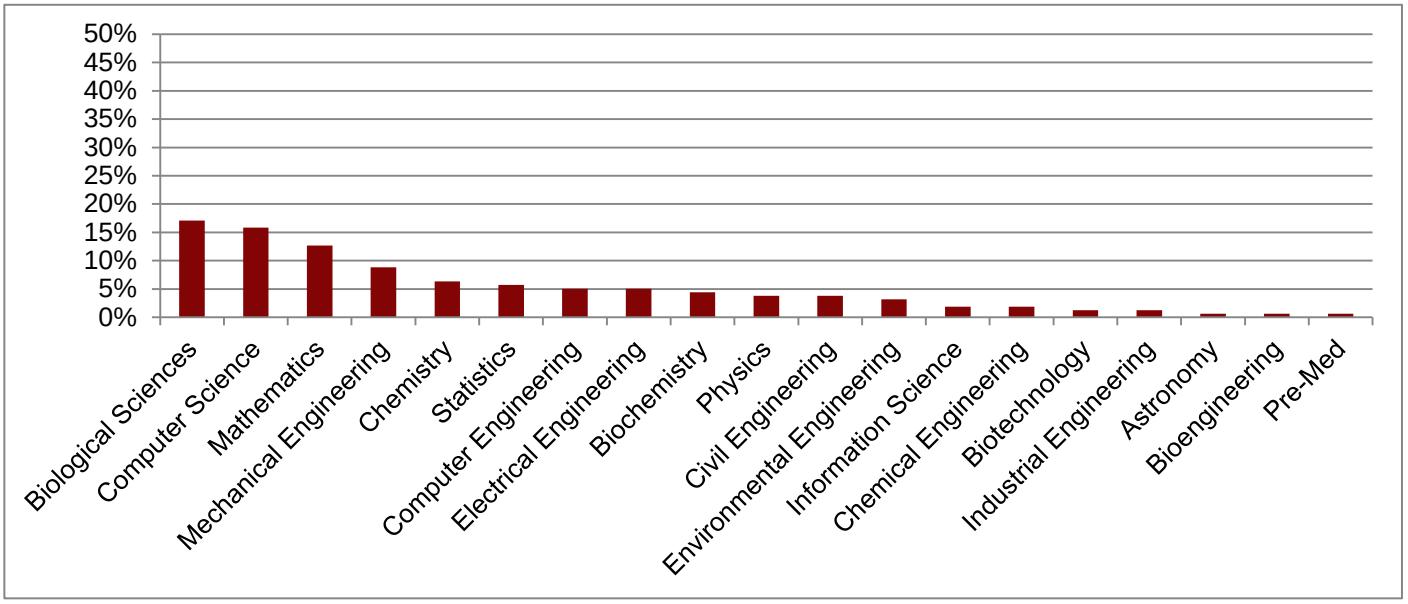
School	STEM Majors N	STEM Majors %	Non STEM Majors N	Non STEM Majors %	Total N	Total %
San Jose State	27	17%	41	17%	68	17%
UC Davis	24	15%	18	8%	42	11%
UC Berkeley	23	15%	24	10%	47	12%
UC San Deigo	12	8%	18	8%	30	8%
UCLA	12	8%	22	9%	34	9%
Undecided	6	4%	6	3%	12	3%
UC Santa Cruz	5	3%	9	4%	14	4%
UC Irvine	5	3%	4	2%	9	2%
Cal Poly San Luis Obispo	5	3%	3	1%	8	2%
San Francisco State	3	2%	22	9%	25	6%
CSU East Bay	3	2%	11	5%	14	4%
UC Santa Barbara	3	2%	4	2%	7	2%
Georgia Tech	3	2%	0	0%	3	1%
University of Illinois Urbana-Champaign	2	1%	0	0%	2	1%
University of Southern California	2	1%	0	0%	2	1%
Santa Clara University	1	1%	4	2%	5	1%
Menlo College	1	1%	2	1%	3	1%
Notre Dame De Namur University	1	1%	2	1%	3	1%
San Diego State	1	1%	2	1%	3	1%
Boston University	1	1%	1	0%	2	1%
Pepperdine University	1	1%	1	0%	2	1%
UC San Diego	1	1%	1	0%	2	1%
Baylor University	1	1%	0	0%	1	0%
Cal Poly Pomona	1	1%	0	0%	1	0%
Canada College	1	1%	0	0%	1	0%
Carnegie Mellon University	1	1%	0	0%	1	0%
Columbia University	1	1%	0	0%	1	0%
CSU Chico	1	1%	0	0%	1	0%
CSU Northridge	1	1%	0	0%	1	0%
Indiana-Purdue	1	1%	0	0%	1	0%
Iona College	1	1%	0	0%	1	0%
Oregon State University	1	1%	0	0%	1	0%
Southern Adventist University	1	1%	0	0%	1	0%
UC Merced	1	1%	0	0%	1	0%
University of Minnesota	1	1%	0	0%	1	0%
University of Washington	1	1%	0	0%	1	0%
Vanguard University	1	1%	0	0%	1	0%
Wichita State University	1	1%	0	0%	1	0%
CSU Long Beach	0	0%	3	1%	3	1%
Palo Alto University	0	0%	3	1%	3	1%
Indiana University	0	0%	2	1%	2	1%
Mills College	0	0%	2	1%	2	1%
Notre Dame	0	0%	2	1%	2	1%

Continued: 13. Which 4- year college of university will you be transferring to in the coming academic year?

	STEM Majors		Non STEM Majors		Total	
School	N	%	N	%	N	%
UC Riverside	0	0%	2	1%	1	0%
Arizona State University	0	0%	1	0%	1	0%
Biola University	0	0%	1	0%	1	0%
Brandeis	0	0%	1	0%	1	0%
California College of the Arts	0	0%	1	0%	1	0%
Concordia university	0	0%	1	0%	1	0%
CSU Fullerton	0	0%	1	0%	1	0%
CSU Fullerton	0	0%	1	0%	1	0%
CSU Montery Bay	0	0%	1	0%	1	0%
CSU Northridge	0	0%	1	0%	1	0%
CSU Sacramento	0	0%	1	0%	1	0%
CSU San Bernardino	0	0%	1	0%	1	0%
CUNY - Baruch College	0	0%	1	0%	1	0%
Dakota State	0	0%	1	0%	1	0%
Eastern Washington University	0	0%	1	0%	1	0%
Humboldt State University	0	0%	1	0%	1	0%
Indiana State	0	0%	1	0%	1	0%
Johns Hopkins University	0	0%	1	0%	1	0%
Lewis and Clark College	0	0%	1	0%	1	0%
Palmer College of Chiropractic	0	0%	1	0%	1	0%
Saint Mary's College	0	0%	1	0%	1	0%
San Francisco Conservatory of Music	0	0%	1	0%	1	0%
Sonoma or San Jose state not this fall	0	0%	1	0%	1	0%
South Western Oklahoma State University	0	0%	1	0%	1	0%
SUNY- binghamton university	0	0%	1	0%	1	0%
University of Florida	0	0%	1	0%	1	0%
University of Georgia	0	0%	1	0%	1	0%
University of Redlands	0	0%	1	0%	1	0%
University of San Diego	0	0%	1	0%	1	0%
University of San Francisco	0	0%	1	0%	1	0%
University of Tampa	0	0%	1	0%	1	0%
	158	100%	239	100%	397	100%

14. What will be your primary major at that college or university?

STEM Majors



Major	N	%
Biological Sciences	27	17%
Computer Science	25	16%
Mathematics	20	13%
Mechanical Engineering	14	9%
Chemistry	10	6%
Statistics	9	6%
Computer Engineering	8	5%
Electrical Engineering	8	5%
Biochemistry	7	4%
Physics	6	4%
Civil Engineering	6	4%
Environmental Engineering	5	3%
Information Science	3	2%
Chemical Engineering	3	2%
Biotechnology	2	1%
Industrial Engineering	2	1%
Astronomy	1	1%
Bioengineering	1	1%
Pre-Med	1	1%
Total	158	100%

NOTE:

Biological Sciences includes: Conservation Biology, Neuroscience, & Wildlife and Conservation Biology
Civil Engineering includes Structural Engineering
Computer Science includes Software Engineering
Industrial Engineering includes industrial technology
Information Sciences includes Busines MIS and system engineering
Mathematics includes applied mathematics
Mechanical Engineering includes motorsports engineering

14. What will be your primary major at that college or university?
Non-STEM Majors

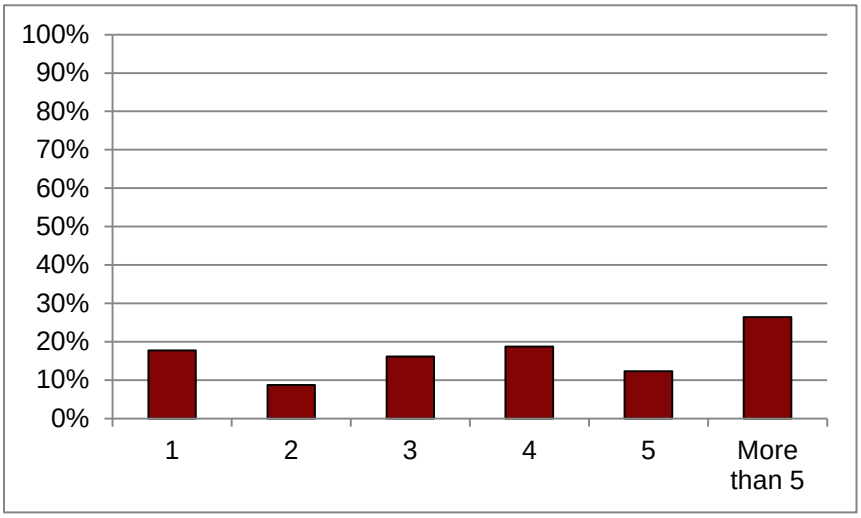
Major	N	%
Business	60	25%
Economics	53	22%
Psychology	25	10%
Communications	12	5%
Sociology	10	4%
Political Science	6	3%
Fine Arts	5	2%
Education	2	1%
History	2	1%
Geology	1	0%
Other	63	26%
Total	239	100%

Other responses include:

Accounting	Development Studies	Geography	Music
Anthropology	Dietetics	Graphic Design	Nursing
Architecture	English	Health Science	Policy Analysis
Asian Humanities	Environmental Economics	Industrial Design	Sports Management
Broadcast Media	Exercise Science	International Relations	Studio Arts
Chiropractic	Family & Consumer Science	Journalism & Communication	Theatre Arts
Cognitive Science	Film	Kinesiology	Urban Planning
Criminal Justice	Finance	Language Studies	

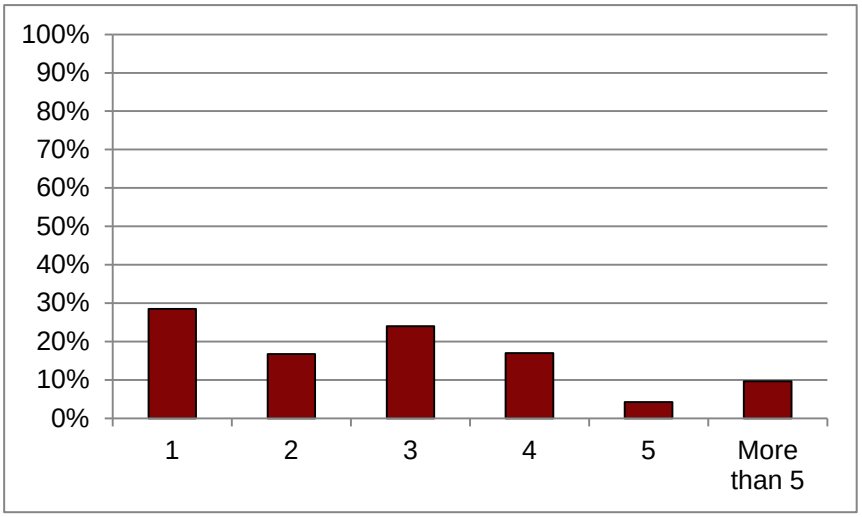
15. How many colleges and/or universities did you apply for transfer?

Response	N	%
1	69	18%
2	34	9%
3	63	16%
4	73	19%
5	48	12%
More than 5	103	26%
Total	390	100%



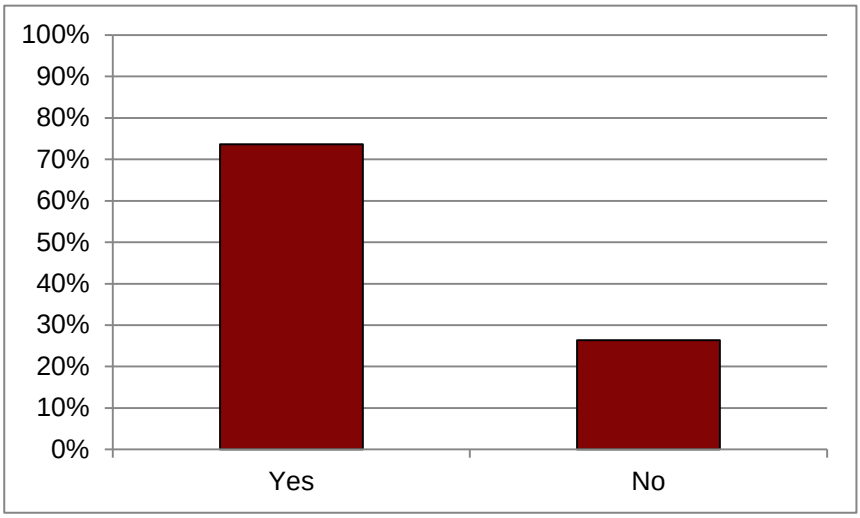
16. How many colleges and/or unversities were you accepted?

Response	N	%
1	109	28%
2	64	17%
3	92	24%
4	65	17%
5	16	4%
More than 5	37	10%
Total	383	100%



17. May we contact you by email next year to follow up on your transfer experience?

Response	N	%
Yes	290	74%
No	104	26%
Total	394	100%



FOOTHILL COLLEGE

Math Experiences Survey

This survey examines the student experiences in Foothill College's college-level math courses to better understand outcomes such as course success and transfer rate to four-year institutions.

By completing and submitting this survey, you agree to submit your name in a random drawing for one iPad mini (valued at $350).

The winner will be contacted by email after the survey closes on Thursday June 27 at noon. Results will be reported in the aggregate only and no individual responses will be identified. Thank you for your participation!

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1. When were you enrolled in your most recent Foothill math course?

- ◯ Fall 2012 (two quarters ago)
- ◯ Winter 2013 (last quarter)
- ◯ Spring 2013 (this quarter)

2. Before you enrolled in your most recent Foothill math course, when was the last time you enrolled in any math course?

- ◯ Less than 1 year ago
- ◯ Between 1 to 2 years ago
- ◯ Between 2 to 3 years ago
- ◯ More than 3 years ago
- ◯ Don't remember

3. What grade did you receive in that math class?

- ◯ A+ to A-
- ◯ B+ to B-
- ◯ C+ to C-
- ◯ D
- ◯ F
- ◯ Incomplete
- ◯ No Pass
- ◯ Pass
- ◯ Withdraw
- ◯ Was concurrently enrolled in more than one math class
- ◯ Not sure/Can't remember

4. Did you take any math classes at ANOTHER COLLEGE before enrolling in a Foothill math course?

- ◯ Yes
- ◯ No

Questions 5-9 refer to the quarter you were enrolled in your most recent Foothill math

class (either Fall 2012, Winter 2013 or Spring 2013).

5. What grade DID YOU RECEIVE OR EXPECT TO RECEIVE in your most recent Foothill math class?

- A+ to A-
- B+ to B-
- C+ to C-
- D
- F
- Incomplete
- No Pass
- Pass
- Withdraw
- Was concurrently enrolled in more than one math class
- Not sure/Can't remember

6. Did you attend any of the PSME Center workshops when enrolled in a Foothill math course?

- Yes
- No

7. How many hours per week (on average) DID YOU SPEND on math homework outside of class?

- None
- 1-5 hours
- 6-10 hours
- 11-20 hours
- 21-30 hours
- More than 30 hours

8. How many hours per week (on average) DID YOU THINK you needed to spend on math outside of class to get the grade you wanted?

- None
- 1-5 hours
- 6-10 hours
- More than 10 hours

9. While you were taking your most recent Foothill math class, how many hours per week (on average) did you work for pay?

- None
- 1-5 hours
- 6-10 hours
- 11-20 hours
- 21-30 hours
- More than 30 hours

10. Did you receive financial aid this academic year?

- Yes
- No

11. Are you an international student?

- Yes
- No

12. Will you be transferring to a 4-year college or university this fall?

- Yes
- No

Submit

Foothill Institutional Research and Planning

Updated 06/11/2013

FOOTHILL COLLEGE

Math Experiences Survey

13. Which 4-year college or university will you be transferring to in the coming academic year?

14. What will be your primary major at that college or university?

Select a major

Other (Please specify):

15. How many colleges and/or universities did you apply for transfer?

- 1
- 2
- 3
- 4
- 5
- More than 5

16. How many colleges and/or universities were you accepted?

- 1
- 2
- 3
- 4
- 5
- More than 5

17. May we contact you by email next year to follow up on your transfer experience?

- Yes
- No

Submit

Foothill Institutional Research and Planning

Updated 06/11/2013