BASIC PROGRAM INFORMATION

Program Review is about documenting the discussions and plans you have for improving student success in your program and sharing that information with the college community. It is also about linking your plans to decisions about resource allocations. With that in mind, please answer the following questions.

Department Name: General Studies: Science (GSS)

Division Name: Biological and Health Sciences (BHS) and Physical Sciences, Math, and Engineering (PSME)

Please list all team members who participated in this Program Review:

Name	Department	Position
Karen Erickson	Biology	FT Faculty
Lisa Ly		Acting College Researcher
Sarah Parikh	Engineering and Physics	FT Faculty
Jennifer Sinclair	Mathematics	FT Faculty
Rosa Nguyen	Chemistry	FT Faculty

Number of Full Time Faculty: 8 (Biol); 17 (Math)

Number of Part Time Faculty: ~17 (Biol); ~30 (Math)

Please list all existing Classified positions: *Example: Administrative Assistant I*

Administrative Assistant (BHS)
Laboratory Technician (100% and 40%)

List all programs covered by this review and indicate the program type:

General Studies ~ Science	Certificate	AA / AS	AD-T	Pathway
	Certificate	AA / AS	AD-T	Pathway
	Certificate	AA / AS	AD-T	Pathway
	Certificate	AA / AS	AD-T	Pathway

	Certificate	AA / AS	AD-T	Pathway

SECTION 1: PROGRAM DATA & ENROLLMENT

1A. Transcriptable Program Data: Data will be posted on Institutional Research's website for all measures except non-transcriptable completion. You must manually copy data in the boxes below for every degree or certificate of achievement covered by this program review.

Transcriptable Program	2013-2014	2014-2015	2015-2016
General Studies ~ Science	17	35	24

1B. Non-Transcriptable Program Data: Please provide any non-transcriptable completion data you have available. Institutional Research does not track this data; you are responsible for tracking this data.

Non-Transcriptable Program	2013-2014	2014-2015	2015-2016
N/A			

Please provide the rationale for offering a non-transcriptable program and share the most recent program completion data available.

1C. Department Level Data:

	2013-2014	2014-2015	2015-2016
Enrollment			
Productivity			
Course Success			
Full-Time Load (FTEF)			

Part-Time Load (FTEF)			

1D. Enrollment Trend:
Program Enrollment (Over Past 3 Years): Increase Steady/No Change Decrease

1E. Course Success Trends: Please describe course success trends for the following student groups and compare the program-level data with the college-level data.

	Program-Level Trend			**College-Level Comparison**		
	Increase	**Steady/No Change**	**Decrease**	**Above**	**At Level**	**Below**
African American						
Asian						
Filipino						
Latino/a						
Native American						
Pacific Islander						
White						
Decline to State						

1F. Course Success Demographics: Please compare the program-level course success rate data for the following student groups with the college-level data.

Male: Above Level At Level Below Level
Female: Above Level At Level Below Level
<25 Years Old: Above Level At Level Below Level
>25 Years Old: Above Level At Level Below Level

1G. Equity: One of the goals of the College's Student Equity plan is to close the performance gap for disproportionately impacted students, including African-American, Hispanic/Latino, and Filipinos/Pacific Islanders. If the course success rates for these students (or other groups not listed above, such as foster youth, veterans, and students with disabilities) is below that of the College, what is your program doing to address this?

Until we start institutionally to identify and track students who identify GSS as their degree goal, we will have neither data nor a basis for addressing equity issues, should we decide that they exist. However, of the 24 degree recipients from 2015/16, 12 identified as Latino(7), Filipino(2), African American(1), or Other(2-Pacific Islander or Decline to State), possibly sugge)

1H. Course Enrollment: If there are particular courses that are not getting sufficient enrollment, are regularly cancelled due to low enrollment, or are not scheduled, discuss how your program is addressing this.

In general, the classes in the GSS Program are part of other, UC/CSU transferable programs and degrees. The biology department courses in the GSS Program are offered regularly, at least once each year, most offered each quarter, several also offered in summer. Currently, there are 16 biology classes that students may select from to meet the Biology requirement for the GSS degree. Only one, Biol 23, is no longer offered (and has been inactivated as of the next academic year). Currently, GSS program participants can choose from among 19 math classes to meet their math requirement. Three of these classes are not frequently offered at this time: Math 11, Math 42, and Math 54H. Math 54H is being deactivated. We have not heard any complaints from students wanting to take these classes, though we don't really have a good idea of who is earning or wanting to earn this degree.

Additionally, Math 1AH & 1AHP are relatively new classes and are currently not offered quarterly like the rest of the math offerings. Nonetheless, that leaves many other options for students who want to earn 5 units (this is equivalent to one math course) of math credit for this degree.

Every Chemistry course is offered every quarter with the exception of Chem 12B and 12C. Chem 12B is only offered in Winter, Spring and Chem 12C in Spring, Summer. Chem 20, and Chem 9 have been cancelled due to low enrollment. We are planning to work with counseling and marketing to increase advertising for Chem 20 and Chem 9.

1I. Productivity: Although the college productivity goal is **535**, there are many factors that affect productivity (i.e. seat count / facilities / accreditation restrictions).

Program Productivity Trend: Increase Steady/No Change Decrease
Program Productivity (Compared to College): Above Goal At Goal Below Goal

Please discuss what factors may be affecting your program's productivity.

Since the productivity of the GSS program would need to take into consideration the productivity of many different courses (biology, chemistry, physics, engineering, computer science, astronomy, and math), it is difficult to determine the overall productivity for this program. Because a majority of the courses in the GSS Program contain a lab component, which limits the class size due to safety and facility issues, and class size is mandated to be smaller, the productivity of the GSS program is likely lower than the College productivity goal. Additionally, the Faculty Association and the District came to an agreement to adjust the faculty teaching loads for lecture and lab classes (making them equal), starting in fall, 2015. So comparisons before and after this date will show a difference due to this adjustment.

If your program's productivity is below that of the College, please discuss your program objectives aimed at addressing this.

There are currently no objectives specifically addressing productivity goals, as labs and small class sizes are part of the nature of this type of program. For classes in the program that do not contain a laboratory, their generally larger size does offset (a little) the lower productivity of classes with labs.

SECTION 2: COURSE COMPLETION & PROGRAM IMPROVEMENT

2A. Institutional Standard: This represents the lowest course completion (success) rate deemed acceptable by the College's accrediting body (ACCJC). The institutional standard is **57%**.

Program Level Course Completion:	Above Standard	At Standard	Below Standard
Targeted Student Course Completion:	Above Standard	At Standard	Below Standard
Online Student Course Completion:	Above Standard	At Standard	Below Standard
In-Person/Hybrid Course Completion:	Above Standard	At Standard	Below Standard

2B. Institutional Effectiveness (IEPI) Goal: This represents an aspirational goal for course completion (success) rates; all programs should strive to reach/surpass this goal. The IEPI goal is **77%**.

Program Level Course Completion:	Above Goal	At Goal	Below Goal
Targeted Student Course Completion:	Above Goal	At Goal	Below Goal
Online Student Course Completion:	Above Goal	At Goal	Below Goal
In-Person/Hybrid Course Completion:	Above Goal	At Goal	Below Goal

Please comment on your program's efforts to continually improve course completion (success) rates, especially for students with basic skills needs.

This is a program on paper only. As such, there are no genuine, program-level efforts being made in any way to support these students. The faculty who could work on developing a rich program don't even know who these students are. The only way we can really address this question within the confines of our current structures is to do what we always do and say that basic skills refers to math (in this case) or English (not so much in this program). Arguably, that is a dysfunctional way of addressing this question, but until we create more flexible systems, it is perhaps the only way we have of addressing this question.

We have put embedded tutors in select Chem 1A and 30A courses.

We have worked with NSF STEMWAY grant to provide Final Exam Review Sessions for Chem 1A courses.

Two members of our Chemistry department have been engaged in a project to test classroom strategies aimed at narrowing the achievement gap. Their findings will serve as a model for future efforts to address this intractable problem. Their work is nearing completion, and will be presented at a Chemistry meeting in the coming year.

Basic skills are part of the math department, so we are sharing from the Math Program Review all that the math department is doing to address basic skills issues.

Statway – Math 217 and Math 17 (formerly Math 57)
The department continues to offer Statway as an alternative pathway to complete the algebra and statistics requirements. Last year, although Statway had relatively low enrollment, the program had a success rate of 65% for Math 217 (the first portion of Statway) and 87% for Math 17 (the second portion of Statway). C-ID has now accepted Statway as a prerequisite for Math 10 and the UC's are allowing articulation of Statway, which may help attract more students and increase enrollment.

Embedded Tutors and Supplemental Instructors
Supplemental instructors from the STEM Center helped out in Math 220, Math 105, Math 108 and Statway last year and the year before. These instructors were in those classes once a week. The results are slightly mixed as course success rates were up in Math 105 and 108 but down in Math 220.

Embedded tutors were placed in Math 235/230, NCBS 401 A/B, in about one fourth of Math 48A classes (by instructor request) and just a handful of Math 48C classes (by instructor request). Embedded tutors have been used for two years in some Math 48A classes, one year in Math 235/230 and Math 48C classes. These tutors are students who help in the class and hold breakout sessions for the students outside of class time. While the tutors are available to the Math 235/230 students outside of class upon request, breakout sessions are not regularly held for Math 235/230. The use of embedded tutors did not seem to make a difference in the overall success rates for these courses. Compared to last year, the course success rates were flat in Math 235 and Math 230, decreased for both Math 48A and Math 48C. The embedded tutoring program has requested data comparing success rates in classes with embedded tutors to those without, but has not yet received the data from institutional research.

Multiple Measures Pilot Program
This year, if students could show that they took and passed intermediate algebra in high school with a targeted minimum GPA, they were placed directly into Math 10 (statistics). Since this fall is the first quarter of the pilot, we do not know how well these students are doing. However, the math department is hopeful that students will come into their math classes without resentment in needing to repeat courses they already took in high school, and thereby performing up to the level they were placed into. The multiple measures program will be expanded to include other math courses.

STEM Center Workshops and Study Groups
The STEM Center provides a supplemental instructor to students who wish to form study groups in any of our math courses. Provided that there is a minimum of 4 students interested in forming a study group, the STEM Center will coordinate efforts to get the study group started. Approximately 10 such study groups were formed each quarter last year.

Foundations Lab
This year, the Foundations Lab is placed in a larger classroom to accommodate the growing number of basic skills students looking for assistance with their math coursework.

Owl Scholars' Program
The Owl Scholars program, formerly known as Early Alert, provides early intervention methods for students who have been identified by their instructors as needing more resources to succeed in their math class. The program is available to students in Math 220, 105 and 1A for now. We do not yet have data on how well the program is working.

STEM Core
STEM Core is a new program funded by a state grant and was implemented in the fall 2016 quarter. The program targets students who have placed into Math 105 and have an interest in obtaining a STEM degree. These students are put in a cohort to complete Math 105 in the fall, Math 48A & 48B in the winter and Math 48C in the spring. Additionally, this cohort of students also takes courses in computer science and engineering to adequately prepare them for the possibility of STEM internship after one year. Math courses include an embedded tutor inside the classroom who also holds weekly workshops outside the classroom. The STEM Core director monitors student's progress daily including attendance and tardiness in addition to academic progress in the courses. Since this program just started, there is no data or results to comment on yet. So far, 56% of the students in this program are of the disproportionate population.

Beyond Diversity and Courageous Conversations
Individual faculty members in the department are attending these workshops and conversations. The idea behind these workshops is for individuals to explore their privileges and be more aware and understanding of others who may not have the same privileges. Change in actual teaching pedagogy will come after individuals have a better understanding of themselves.

FTLA (Faculty Teaching and Learning Academy)
Four of our full time faculty members are attending this year-long professional development program and will be sharing what they learned with the department.

Umoja cohort
In the early winter quarter, we will run a non-credit basic skills course (6 weeks) to prepare students from the Umoja cohort for Math 220 in the spring quarter.

If your program's course completion (success) rates are below the institutional standard (see above), please discuss your program objectives aimed at addressing this.

As an institution, we have only just begun to collect information on these students. One day, we may know what the course completion rates are for students in this program!

2C. Faculty Discussion: Does meaningful dialogue currently take place in shaping, evaluating, and assessing your program's Student Learning Outcomes (SLOs)? Yes No

Does meaningful dialogue currently take place around equity and course success rates? Yes No

If yes, in what venues do these discussions take place? (Check all that apply)
Department Meetings Opening Day Online Discussions Other: PR/PL-SLO meetings

If no, please discuss what is missing and/or the obstacles to ensuring meaningful dialogue takes place.

We marked yes because at the department level, some dialogue is happening and because for the purpose of creating this program review, we met and also had online discussions. But at a program level, little is happening between program review due dates. It is important for us to honestly analyze what is actually happening here, so we have a starting point for identifying needed resources should we all decide that this program is worth continuing.

Because the GSS degree is housed in the PSME division and requires that students take courses from 7 departments (in two divisions), the logistics of getting faculty together for meaningful dialog are nearly insurmountable. One testament to this is that the program review for this program last year was completed by the two deans, with no faculty participation or input. Another obstacle is simply not knowing who these students are. In any given course, it is impossible to tell which students are part of the GSS program. In fact, until students petition to graduate, they might not even identify themselves as such. The courses required for this degree are quite the hodge-podge and in writing this review, we engaged the institutional researcher just to try and identify who these students are and what they might be doing with the GSS degree. Although the preliminary data are interesting (24 total GSS graduates, 8 of whom also had another degree, 5 of whom ended up enrolled at Foothill in fall 2016 and 2 of whom appear to be in one of the BHS Allied Health programs), it's too soon to tell if this information is meaningful for shaping the program. Perhaps the biggest obstacle is assessing the PL-SLOs. While they are reasonable outcomes, assessing them is an impossible task, since at minimum we need to know WHO we need to assess!

Institutional Research has shared that "Of the students who enrolled during Fall 2016 at Foothill, 243 have declared General Studies Science as their major." This suggests to us that the interest in this degree is significant. But the interdepartmental nature of this degree makes it so that we have less information about this group than we typically have about degree seekers. If we really want to serve these 243 students, we need to get to know who they are and what they need. Student voice and perspective is such an important but overlooked factor related to student success and transformation. If we continue with this program, ethical reasoning demands that we reach out to these students and make a sincere attempt to understand their perspective.

The Chemistry faculty have increased the frequency of our meetings in an effort to better coordinate the numerous shared duties of our department, but we struggle to find time for meaningful exchange on pedagogy.

In an effort to address our shared goals for greater success in meeting our course and program learning outcomes, we would like support for creating a culture that will strengthen us as a whole rather than merely as individual instructors. Mentoring of part-time faculty, facilitation of full-time faculty discussion, and time for substantive SLO discussion are all currently unfunded activities that will not receive the attention they deserve without support.

2D. Course-Level: How has assessment and reflection of course-level Student Learning Outcomes (CL-SLOs) and course completion data led to course-level changes?

Assessment and reflection of CL-SLOs will be department specific. In the biology department, regular assessment and reflection occurs. Course level changes include the design of more hands-on, student-centered, active-learning activities. In the math department:
• Some instructors are changing their courses to include more flip activities.
• The math department recently changed the calculus textbook, which has more graphics and interactive sliders accessible through the e-book to help students visualize difficult concepts.
• Quantway materials were tested in Math 108 in 15/16.
• Some instructors are revising their course syllabi to take on a learning-centered approach.
• Instructors are increasing the offerings of Math 235/230 by running evening sections.
• The math department has adopted a new graphing technology policy no longer requiring specifically the TI-83/84 graphing calculator for our courses. Instead, students would be able to use free graphing technology that can be accessed from a laptop or tablet or smart phone.

If your program's CL-SLOs are not being met, please indicate your program objectives aimed at addressing this.

For the CL-SLOs in the main core classes from biology that are part of this degree (Biol40ABC, 41), CL-SLOs are being, or very nearly being met. Some strategies for improvement include increased use of the STEM Center (in some cases, classes have specific assignments due in the STEM Center) and the use of embedded tutors (in Biol41).
CL-SLO targets were not met in many math classes last year, but not in Math 108, Math 105, Math 10, Math 48A and Math 1C. (Some of this is due to the randomness of setting targets.)
The following program objectives will help improve instructors' ability to teach and student ability to learn mathematical concepts in these classes: (1) Provide support and guidance for adjunct faculty members, (2) Improve pedagogical practices, (3) Share good teaching materials, (4) Develop videos, handouts and other material to support student learning.

2E. Program-Level: How has assessment and reflection of program-level Student Learning Outcomes (PL-SLOs) led to certificate/degree program changes and/or improvements?

PL-SLOs are currently not being assessed for this program. Again, the logistical challenges of this program's structure make assessment and reflection a difficult task. In meetings to discuss this program review, some potential solutions to this were discussed (to whom, how, when to administer a survey; how to identify GSS students and in which class might the assessment be completed).

Ultimately, the Program level SLOs should be designed with the student population and student goals in mind. Once we have information on that, we will be able to assess the effectiveness of this program and potentially make changes to increase student success. The first step is to contact the students who received the degree and ask them a series of questions including why they chose this program. This could be done through interviews, a focus group, or an online survey.

What is being done at the program-level to assist students in achieving degree/certificate completion and/or transferring to a four-year institution?

Again, until we know what the goals are for the students who choose this program, the faculty feel it is very difficult to assist students. In looking at the data, it appears some students choose this degree because they are applying for one of the BHS Allied Health programs. The courses most likely applied to this degree include the "non-majors" level courses of anatomy and physiology, microbiology, general chemistry, all of which are part of the prerequisite courses for the Allied Health programs.

If your department has a Workforce/CTE program, please complete Section 2F.
If your department does not have a Workforce/CTE program, please skip to Section 3.

2F. Workforce/CTE Programs: Refer to the program review website for labor market data.

What is the regional three-year projected occupational growth for your program?	N/A

What is being done at the program-level to assist students with job placement and workforce preparedness?

Students who receive a GSS degree AND then enter into one of the BHS Allied Health programs will likely receive assistance from these individual programs.

If your program has other program-level outcomes assessments (beyond SLOs and labor market data), discuss how that information has been used to make program changes and/or improvements.

SECTION 3: SUMMARY OF PROGRAM OBJECTIVES & RESOURCE REQUESTS

3A. Past Program Objectives: Please list program objectives (not resource requests) from past program reviews and provide an update by checking the appropriate status box.

professional development	Year: 15-16	Completed	Ongoing	No Longer a Goal
equity initiatives	Year: 15-16	Completed	Ongoing	No Longer a Goal
online course success rate increased	Year: 15-16	Completed	Ongoing	No Longer a Goal
	Year:	Completed	Ongoing	No Longer a Goal
	Year:	Completed	Ongoing	No Longer a Goal
	Year:	Completed	Ongoing	No Longer a Goal

	Year:	Completed	Ongoing	No Longer a Goal
	Year:	Completed	Ongoing	No Longer a Goal

Please comment on any challenges or obstacles with ongoing past objectives.

Challenges and obstacles are that the GSS Program objectives are not unique to the GSS program, but are part of the PSME/BHS department goals. Because each division is likely working on achieving these goals in different ways, a challenge is in collaboration (not because of lack of desire, but lack of time).

Please provide rationale behind any objectives that are no longer a priority for the program.

3B. New Program Objectives: Please list all new program objectives discussed in Sections 1-2; do not list resource requests in this section.

Program Objective	**Implementation Timeline**	**Progress Measures**
Example: Offer 2 New Courses to Meet Demand	*Winter 2016 Term*	*Course Enrollment*
1. create a consistent method to identify WHO the GSS students are and how the GSS degree fits into their educational and career goals	ongoing	
2. create a consistent method for faculty in the GSS Program to meet and discuss program outcomes, goals, and needs	annually	updated curriculum sheets, PL-SLO assessment and reflection completed

3C. EMP Goals. Please refer to the Educational Master Planning (EMP) website for more information. Indicate which EMP goals are supported by your program objectives (Check all that apply).

Create a culture of equity that promotes student success, particularly for underserved students.

Strengthen a sense of community and commitment to the College's mission; expand participation from all constituencies in shared governance.
Recognize and support a campus culture that values ongoing improvement and stewardship of resources.

3D. Resource Requests: Using the table below, summarize your program's unfunded resource requests. Refer to the Operations Planning Committee (OPC) website for current guiding principles, rubrics and resource allocation information. Be sure to mention the resource request in your narrative above when discussing your program so the request can be fully vetted.

Resource Request	$	Program Objective (Section 3B)	Type of Resource Request			
			Full-Time Faculty/Staff Position	One-Time B-Budget Augmentation	Ongoing B-Budget Augmentation	Facilities and Equipment
IR support in collecting the kind of information that is needed to identify, interview		1. create a consistent method to identify WHO the GSS students are and how the GSS degree fits into their educational and career goals				
Institutional interest and support for establishing collaboration time (PD days, in-service days, weekly collaboration blocks)		2. create a consistent method for faculty in the GSS Program to meet and discuss program outcomes, goals, and needs				

3E. Unbudgeted Reassigned Time: Please list and provide rationale for requested reassign time.

If there is serious interest in this work, then it makes sense to provide 0.333 reassign time to support a person or persons in interviewing the 243 students who have identified GSS as their degree goal.

3F. Please review the resource requests that were granted over the last three years and provide evidence that the resource allocations supported your objectives and led to student success.

SECTION 4: PROGRAM SUMMARY

4A. Prior Feedback: Address the concerns or recommendations made in prior program review cycles, including any feedback from the Dean/VP, Program Review Committee (PRC), etc.

Concern/Recommendation	Comments
discuss equity efforts across divisions	need to find the time and personnel to coordinate this; unlikely to be meaningful until we know who these students are

conduct PL-SLOs	agreed this is important; need to find a reliable method to do so; the aggregated data that we've seen so far does not really provide a "snap shot" (if such a thing exists) of a "typical" student; if we can see the ordered sequence of classes that students take and understand with what purpose, then we could refine the degree requirements and identify where/how PL-SLOs are evaluated Possible scenario, simply for clarification purposes: Perhaps this program deserves a PT director or administrative assistant who reaches out to students each quarter and supports their progress by inviting them to program office hours or Q&A sessions. That person could coordinate with each program participant as they approach graduation to complete a capstone project related to a higher-level course. Alternatively, that person could coordinate with students in building a portfolio that might be used to evaluate the PL-SLOs. Such a person would be in a good position to inform changes that would be helpful/responsive to the issues that serve as obstacles to students.
initiate program research	we did engage our institutional researcher on this and she has been immensely helpful; data on specific questions have been, when possible collected and discussed in this review; we are looking forward to getting more information on who these students are

4B. Summary: What else would you like to highlight about your program (e.g. innovative initiatives, collaborations, community service/outreach projects, etc.)?

The existence of this program is an innovation. Data suggests that some students who qualify for other degrees get this one as well (just because they can). (8/24 of these degree recipients in 15/16 obtained another degree and/or certificate as well). But 16/24 of those students did not get another degree/certificate as well. So it may well be that this degree is a really good fit for the interests of many students (recall that 243 students were working on this goal in Fall 2016). We are really curious about who those students are! Once we get to know them, we can really get down to the business of improving this innovation.

SECTION 5: LEARNING OUTCOMES ASSESSMENT SUMMARY

5A. Attach 2015-2016 Course-Level Outcomes: Four Column Report for CL-SLO Assessment from TracDat. Please contact the Office of Instruction to assist you with this step if needed.

5B. Attach 2015-2016 Program-Level Outcomes: Four Column Report for PL-SLO Assessment from TracDat. Please contact the Office of Instruction to assist you with this step if needed.

SECTION 6: FEEDBACK AND FOLLOW-UP

This section is for the Dean/Supervising Administrator to provide feedback.

6A. Strengths and successes of the program as evidenced by the data and analysis:

From Nanette Solvason:
This is a popular AS degree, however, the interdisciplinary nature of the degree has led to unintended consequences that make robust reflection and analysis of effectiveness difficulty. Currently 270 have declared this degree as their major, but the faculty are unable to adequately evaluate the success programmatically or at the course level since students are "mixed" in among other students. Faculty are working with institutional research to develop new tools for this analysis, but currently, the methods are not in place.

Therefore, it is impossible to confidently evaluate the effectiveness (strengths and successes) of the program without appropriate data, however, there is no doubt that this is a popular array of course options for students.

From Lori Silverman:
The popularity of this program suggests that there are students interest in obtaining a general science degree. To assist these students, we need to investigate who these students are and why they are interested in this program.

One strength of this program is that it gives students a general science education and maybe play a bridge for developing a pathway for students toward a STEM career or exploration. Another strength is the high percentage of under-represented students who have obtained the degree, in comparison to the institution percentage of these groups. This program could be a pathway for these under-represented students to explore or sample their interest in STEM.

6B. Areas of concern, if any:

From Nanette Solvason:
The curriculum is a mixture of courses that offer broad exposure to science courses but not a single majors course is required so the depth of knowledge for this degree is limited. This degree may, however, meet the needs of some students who are (1) using the degree to supplement their knowledge base for teaching in elementary or middle schools or (2) provide needed prerequisite courses for applications to allied health or nursing programs.

The degree appears to have been created years ago prior to ADT development and there is no "owner" of the program with historical knowledge or memory as to the specific goals of the degree.

From Lori Silverman:
The multi-department and multi-division of this program makes it hard to coordinate and improve the program. As iterated by Dean Solvason, "ownership" is an issue but in particular, faculty ownership is missing because it resides in multiple disciplines.

6C. Recommendations for improvement:

From Nanette Solvason
For the short term

1. Given the popularity of this program, it is imperative that evaluative processes be developed by institutional research

For the Long term

1. A working group comprised of discipline faculty, counselors and allied health program directors should be convened to establish (1) how student are being "guided" to this degree (2) is the degree in its current form really the best option for students who are encouraged to choose it (3) would there be an option to develop a transfer degree in place of this local degree (4) for the specific student applying to AH/nursing programs, would a different degree with transfer options be a better choice.

From Lori Silverman:
I support Dean Solvason's recommendations. The need of this program should to be re-assess in terms of it serving as a terminal degree and also as a transfer degree. More data is needed to answer questions like, "why are students interested in this degree," "how have students used this degree upon completion," and "who is attracted to this program?"

For program like this to be success, a STEM division that houses all these departments might easy the coordination issues. If using this logical, then the recommendation is to revamp/resort the divisions at Foothill College.

6D. Recommended Next Steps:

Proceed as Planned on Program Review Schedule

Further Review / Out-of-Cycle In-Depth Review

This section is for the Vice President/President to provide feedback.

6E. Strengths and successes of the program as evidenced by the data and analysis:

I commend the faculty for examining the available data and being curious about how best to meet student needs. This is in fact an innovative program that might work as a model for us in how to work across divisions – what resources (time, people, financial) are needed to support the effort?

6F. Areas of concern, if any:

I know program outcomes are difficult to assess in this case, but it is not impossible. As Dean Silverman notes it is possible that this program serves as a pathway to other programs and this should be examined in the future.

6G. Recommendations for improvement:

I support the Dean's recommendations. In addition, I might suggest a rotating chair who takes the lead in organizing the discussion. I encourage the group to request SEW support (early alert, mentoring?) and perhaps equity funds to support additional research and to set up reports of students who have selected this major that can be accessed each quarter. Perhaps the Stem Center might play a role? Counseling should also be brought in to future discussions.

6H. Recommended Next Steps:

X Proceed as Planned on Program Review Schedule
Further Review / Out-of-Cycle In-Depth Review

Upon completion of Section 6, the Program Review document should be returned to department faculty/staff for review, then submitted to the Office of Instruction and Institutional Research for public posting. Please refer to the Program Review timeline.

General Studies Science AS

Program (Interdisciplinary) - General Studies Science AS

Primary Core Mission: Transfer

PL-SLOs	*Assessment Methods*	*Assessment Findings/Reflections*	*Action Plan*
1 - Upon successful completion of the General Studies: Science program, students will be able to integrate the various fields of science in order to critically evaluate and interpret scientific information **SLO Status:** Active	**Interviews/Focus Groups -** Students with the declared major in General Studies Science will be invited to participate in a focus group to assess their overall understanding of the different fields of science **Target:** the majority of students will be able to critically evaluate and interpret scientific information.		
2 - Upon successful completion of the General Studies: Science program, students will be able to assess how relevant scientific information could be used to inform their own personal economic, political and social decisions **SLO Status:** Active	**Survey -** Students in the major will be invited to participate in a survey that will evaluate how their increased understanding of science will influence their decision making processes related to economics, politics and social decisions.	**Year This Assessment Occurred:** 2011-2012 **Result:** Target Not Met Surveys were sent out to 22 students who were reported as completing the AS General Sciences Degree in the 2011-2012 academic year. Only 3 replied and while the replies were generally positive, the overall outcomes are not very meaningful due to the low response rate. (08/27/2012) **Related Documents:** GS_Science PSLO survey 2012.pdf	**Action Plan:** I am not sure how to increase the response rate. Perhaps sending out the surveys mid-quarter in the Spring would increase the rate. Also, next year (2012-2013) we will have the surveys sent out from the Research office, which may or may not help. (08/27/2012)