## Instructional Program

## Astronomy

## What is Program Review?

Program review is a key element of integrated planning at VC. It provides programs with an opportunity for reflection and improvement. Programs analyze data on key metrics that are derived from the VC Educational Master Plan. Then, they identify successes and areas for improvement. They develop goals/initiatives for how they will improve, and if necessary, request resources that are necessary to meet those goals/initiatives.

## What is not included in Program Review?

The following should not be requested through program review:

1. Day-to-day operational requests (e.g. routine maintenance requests, broken chairs, etc.).
2. Requests for ongoing, recurring expenses (e.g. requesting the same supplies that were purchased in previous years).
3. Requests that are not directly tied to VC's Educational Master Plan Goals.

Day-to-day and/or recurring maintenance and facilities requests should be made through the Facilities, Maintenance \& Operations Department.

Day-to-day and/or recurring requests for supplies should be made through the program's Division budget, in consultation with the Division Dean/Manager.

## Ventura College Educational Master Plan Goals

Goal 1: Continuously improve educational programs and services to meet student, community, and workforce development needs.

Goal 2: Provide students with information and access to diverse and comprehensive support services that lead to their success.

Goal 3: Partner with local and regional organizations to achieve mutual goals and strengthen the College, the community and the area's economic vitality.

Goal 4: Continuously enhance institutional operations and effectiveness.
Goal 5: Implement the Ventura College East Campus Educational Plan.

## Section A－Course Success Rate

Examine your program＇s course success rate data．Ventura College has set a standard of $66.7 \%$ for its course success rate．
1．Was your program＇s 2015 course success rate higher than the college standard of $66.7 \%$ ？
区 YesNo

2．Was your program＇s 2015 course success rate higher than the overall college success rate？区 YesNo

3．Is your program＇s course success rate increasing，decreasing，or remaining constant？IncreasingDecreasingRemaining Constant

4．Are there gaps between demographic groups（ethnicity，gender）in your program＇s course success rate？区 YesNo

5．Briefly describe the reason（s）for the trend in your program＇s course success rate，and for any gaps between demographic groups（1，000 characters max）．
The course success rate has been essentially constant at around $77 \%$ ．There are consistent，year－to－year gaps between the two largest ethnic groups：Hispanic（70．3\％）and White students（83．9\％）．Any differences between gender do not appear to be significant or consistent．The reason（s）for the ethnic gap is not known，but a similar gap is also observed in most STEM courses at VC．

Based on your data analysis above，enter 1－2 initiatives below that describe how your program will increase its course success rate．

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Initiative \& \multicolumn{2}{|l|}{Data} \& \multicolumn{7}{|c|}{Resources Needed to Meet Initiative} \\
\hline What will your program do to increase its course success rate？ \& Which metric（s） will this initiative improve？ \& How many students will this initiative directly impact？ \& Do you need additional resources to meet this initiative？ \& If yes，what type of resources？ \& Brief description of resources needed \& \begin{tabular}{l}
Cost \\
Estimate
\end{tabular} \& Source of Cost Estimate \& Has this request been made in a prior year？ \& If yes， which year（s）？ \\
\hline Seek additional qualified （paid）tutors for astronomy．Estimated to directly impact a minimum of \(10 \%\) of total astronomy students． \& \begin{tabular}{l}
区 Course Success \\
Rate \\
\(\square\) Degrees／ \\
Certificates \\
Awarded \\
区 Equity gaps \\
\(\square\) SLO＇s
\end{tabular} \& 70 \& \[
\begin{aligned}
\& \square \text { Yes } \\
\& \square \text { No }
\end{aligned}
\] \& \begin{tabular}{l}
Equipment
Supplies
Technology
Facilities
Professional \\
Development
Student \\
Workers \\
＊Use page 13 for faculty／staff hiring requests
\end{tabular} \& One student astronomy tutor． \& \＄2，625．00 \& \[
\begin{aligned}
\& \text { (\$15/hr) } \\
\& (10 \mathrm{hr} / \mathrm{wk}) \\
\& \text { (17.5wks) } \\
\& \text { (17utor) }
\end{aligned}
\] \& \[
\begin{aligned}
\& \square \text { Yes } \\
\& \square \mathrm{No}
\end{aligned}
\] \& \\
\hline Actively encourage any STEM students in these courses to participate in MESA，SHPE，and／or student－lead study groups．Estimated to directly impact a minimum of \(25 \%\) of Hispanic STEM students． \& \begin{tabular}{l}
区 Course Success \\
Rate \\
\(\square\) Degrees／ \\
Certificates \\
Awarded \\
区 Equity gaps \\
\(\square\) SLO＇s
\end{tabular} \& 90 \& \[
\begin{aligned}
\& \square \mathrm{Yes} \\
\& \mathrm{X} \text { No }
\end{aligned}
\] \& \begin{tabular}{l}
Equipment
Supplies
Technology
Facilities
Professional \\
Development

Student <br>
Workers <br>
＊Use page 13 for faculty／staff hiring requests

\end{tabular} \& \& \& \& \[

$$
\begin{aligned}
& \square \mathrm{Yes} \\
& \square \text { No }
\end{aligned}
$$
\] \& <br>

\hline
\end{tabular}

## 2016-2017 Instructional Program Review

## Section B - Degrees and Certificates Awarded

VC has set a standard to award a minimum of 1,178 degrees and certificates each year. Programs that have awarded fewer than 15 degrees/certificates over the past five years may be placed on discontinuance.

1. Does your program offer a degree or certificate of achievement?Yes 区 No
If yes, please examine the degree and certificate data, and skip to question 3. If no, please answer question 2.
2. How does your program contribute to Ventura College's meeting of its standard of awarding 1,178 degrees and certificates each year? (e.g. providing general education, IGETC, CSU-GE courses, etc.) (1,000 characters max). After answering this question, skip to section C.
Astronomy courses are not mandatory for STEM programs, but are often taken to fulfill natural sciences requirements for many educational programs including technical associate degrees and degrees for transfer to CSU, UC, and out-of-state institutions. Learning about the cosmos is interesting and it develops quantitative reasoning, critical thinking, and problem solving skills.
3. Describe the trend in the number of degrees/certificates that your program has awarded over the past 5 years, and the reasons for the trend. In particular, if any active degree/certificate is on program warning, please address the reason(s) why it is on warning and your plan for improvement. N/A.
4. Are there gaps between demographic groups (ethnicity, gender) in the number of degrees and certificates awarded by your program?YesNo
5. If yes, please describe the gaps, and the reasons for any gaps between demographic groups ( 1,000 characters max).

N/A.

Based on your data analysis above, enter 1-2 initiatives below that describe how your program will increase the number of degrees and/or certificates it awards to students.

| Initiative | Data |  | Resources Needed to Meet Initiative |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| What will your program do to increase the number of degrees and/or certificates it awards to students? | Which metric(s) will this initiative improve? | How many students will this initiative directly impact? | Do you need additional resources to meet this initiative? | If yes, what type of resources? | Brief description of resources needed | Cost <br> Estimate | Source of Cost Estimate | Has this request been made in a prior year? | If yes, <br> which year(s)? |
| Update aging SCI-116 classroom. Updates will also benefit students in other courses/programs that use the room. | Course Success Rate Degrees/ Certificates Awarded Equity gaps SLO's | 150 | $\begin{aligned} & \square \mathrm{Yes} \\ & \square \mathrm{No} \end{aligned}$ | Equipment Supplies Technology Facilities Professional <br> Development Student <br> Workers <br> *Use page 13 for faculty/staff hiring requests | Paint walls and doors; install "3M Projection Screen Whiteboard Film" on whiteboards or install new larger whiteboards with dual use capability; install a second, projector for the east whiteboard for docu-cam view; secure loose wires hanging down from ceiling. | \$ 7,000.00 | Need itemized quote. | $\begin{aligned} & \square \mathrm{Yes} \\ & \square \mathrm{No} \end{aligned}$ |  |
| Increase success rates with more engaging laboratory activities that utilize technology. (Note that this initiative also appears in the physics program review). | Course Success Rate区 Degrees/ Certificates Awarded Equity gaps SLO's | 150 | $\begin{aligned} & \square \text { Yes } \\ & \square \text { No } \end{aligned}$ | $\square$ Equipment Supplies Technology Facilities Professional <br> Development Student <br> Workers <br> *Use page 13 for faculty/staff hiring requests | Purchase 10 digital cameras and adapter hardware for use in physics and astronomy lab experiments. | \$ 5,000.00 | (10cameras) (500/camera and mounts) | $\begin{aligned} & \square \text { Yes } \\ & \square \text { No } \end{aligned}$ |  |

## Section C - Student Learning Outcomes

1. Are there any courses your program offers that have never been assessed?
2. If yes, list the courses and explain why they haven't been assessed. (1,000 characters max)
$\square$
3. What percentage of your program's courses have assessed at least half of their SLO's?
$\qquad$ \%
4. Have you made any changes to courses based on the results of SLO assessments?区 Yes $\square$ No
5. If yes, briefly describe the changes were made and the impact they had on student learning. (1,000 characters max)

Several changes have been made including: 1) Adoption of a high-quality textbook that is more readily available to the students at lower cost; 2) Updates to the astronomy labs with more engaging student-centered activities. 3) Telescopes were acquired through last year's program review and are now being incorporated into astronomy labs. Students have responded enthusiastically to the opportunities for more engaging lab activities both inside the lab and when using the telescopes outside on observation nights. The implementation of these changes is not yet complete and will be monitored through the spring 2017 semester.
6. How many courses have assessed SLO's, implemented a change, and then re-assessed the SLO's (i.e. "closed the loop")? 2 _ courses
7. How closely have you adhered to your SLO rotational plan? (Examine TracDat "Adherence to Assessment Cycle" Report)Completely
X MostlyPartiallyNot at All

## 2016-2017 Instructional Program Review

8. Did anything impede your ability to adhere to your SLO rotational plan? (Examine TracDat "Adherence to Assessment Cycle" and "Adherence to PSLO Assessment Cycle" Reports) (1,000 characters max)
Scheduling time with adjuncts to discuss SLOs, and obtaining SLO assessment results was often challenging and not always successful.
9. How does your program facilitate the achievement of the college's institutional learning outcomes? (1,000 characters max)

All astronomy courses strongly support "Scientific and Quantitative Reasoning" (ISLO-2) and "Critical Thinking and Problem Solving" (ISLO-3). In astronomy lecture classes students develop multiple skills needed to investigate or solve classic and novel scientific problems. In laboratory classes they perform experiments to collect data which is then analyzed and interpreted according to current scientific models. Critical thinking and problem solving are an integral part of nearly every activity in both lecture and laboratory classes.
10. How many department/program meetings have you held in the previous year in which SLO's have been discussed?
$\qquad$ meetings

## 2016-2017 Instructional Program Review

Based on your data analysis above, enter 1-2 initiatives below that describe how your program will improve student learning.

| Initiatives | Data |  | Resources Needed to Meet Initiative |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| What will your program do to improve student learning? | Which metric(s) will this initiative improve? | How many students will this initiative directly impact? | Do you need additional resources to meet this initiative? | If yes, what type of resources? | Brief description of resources needed | Cost <br> Estimate | Source of Cost Estimate | Has this request been made in a prior year? | If yes, which year(s)? |
| Continue review of current SLOs and assessments to evaluate their effectiveness in revealing significant opportunities for program performance improvement. | Course <br> Success Rate Degrees/ Certificates Awarded Equity gaps SLO's | 700 | $\begin{aligned} & \square \mathrm{Yes} \\ & \mathbf{x} \text { No } \end{aligned}$ | $\square$ Equipment $\square$ Supplies $\square$ Technology $\square$ Facilities $\square$ Professional Development $\square$ Student Workers *Use page 13 for faculty/staff hiring requests |  |  |  | $\begin{aligned} & \square \mathrm{Yes} \\ & \square \mathrm{No} \end{aligned}$ | 2015-2016 |
| Limited (staffed) open lab hours will be instituted in order to encourage students to participate in groups and have a place to study outside of class and lab hours. Estimated to directly impact a minimum of $10 \%$ of total astronomy students. | Course <br> Success Rate Degrees/ <br> Certificates <br> Awarded Equity gaps SLO's | 70 | $\begin{aligned} & \square \mathrm{Yes} \\ & \mathbf{x} \text { No } \end{aligned}$ | Equipment Supplies Technology Facilities Professional <br> Development Student <br> Workers <br> *Use page 13 for faculty/staff hiring requests |  |  |  | $\begin{aligned} & \square \mathrm{Yes} \\ & \square \mathrm{No} \end{aligned}$ |  |

## Section D - Previous Year Initiatives

Click here to view previous year initiatives.

## Section E-2016-2017 Program Initiative Prioritization

Initiatives from the sections above will automatically populate the table below. Please prioritize them to indicate which initiatives are the top priorities for your program.

| Initiative |  | Data |  | Resources Required to Meet Initiative |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Priority | What will your program do to improve student achievement and learning? | Which metric(s) will this initiative improve? | How many students will this initiative directly impact? | Do you need additional resources to meet this initiative? | If yes, what type of resources? | Brief description of resources needed | Cost <br> Estimate | Source of Cost Estimate | Has this request been made in a prior year? | If yes, which year(s)? |
| 4 | Seek additional qualified (paid) tutors for astronomy. Estimated to directly impact a minimum of $10 \%$ of total astronomy students. | Course Success Rate Degrees/ Certificates Awarded Equity gaps SLO's | 70 | $\begin{aligned} & \mathbf{x} \text { Yes } \\ & \square \text { No } \end{aligned}$ | Equipment Supplies Technology Facilities Professional <br> Development Student <br> Workers <br> *Use page 13 for faculty/staff hiring requests | One student astronomy tutor. | \$ 2,625.00 | (\$15/hr) <br> (10hr/wk) <br> (17.5wks) <br> (1Tutor) | $\begin{aligned} & \square \text { Yes } \\ & 区 \text { No } \end{aligned}$ |  |
| 1 | Actively encourage any STEM students in these courses to participate in MESA, SHPE, and/or student-lead study groups. Estimated to directly impact a minimum of $25 \%$ of Hispanic STEM students. | Course <br> Success Rate <br> Degrees/ <br> Certificates <br> Awarded <br> 区 Equity gaps SLO's | 90 | $\begin{aligned} & \square \text { Yes } \\ & \square \text { No } \end{aligned}$ | Equipment Supplies Technology Facilities Professional Development Student <br> Workers <br> *Use page 13 for faculty/staff hiring requests |  |  |  | $\begin{aligned} & \square \mathrm{Yes} \\ & \square \mathrm{No} \end{aligned}$ |  |

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|r|}{Initiative} \& \multicolumn{2}{|l|}{Data} \& \multicolumn{7}{|c|}{Resources Required to Meet Initiative} \\
\hline Priority \& What will your program do to improve student achievement and learning？ \& Which metric（s） will this initiative improve？ \& How many students will this initiative directly impact？ \& Do you need additional resources to meet this initiative？ \& If yes，what type of resources？ \& Brief description of resources needed \& \begin{tabular}{l}
Cost \\
Estimate
\end{tabular} \& Source of Cost Estimate \& Has this request been made in a prior year？ \& If yes， which year（s）？ \\
\hline 3 \& Update aging SCI－116 classroom．Updates will also benefit students in other courses／programs that use the room． \& 区 Course Success Rate区 Degrees／ Certificates Awarded \(\square\) Equity gaps \(\square\) SLO＇s \& 150 \& \[
\begin{aligned}
\& \hline \mathbf{区} \text { Yes } \\
\& \square \mathrm{No}
\end{aligned}
\] \& \begin{tabular}{l}
Equipment
Supplies
Technology
Facilities
Professional \\
Development \\
\(\square\) Student \\
Workers \\
＊Use page 13 for faculty／staff hiring requests
\end{tabular} \& Paint walls and doors； install＂3M Projection Screen Whiteboard Film＂on whiteboards or install new larger whiteboards with dual use capability；install a second，projector for the east whiteboard for docu－cam view； secure loose wires hanging down from \& \＄7，000．00 \& Need itemized quote． \& \[
\begin{aligned}
\& \square \mathrm{Yes} \\
\& \mathrm{区} \mathrm{No}
\end{aligned}
\] \& \\
\hline 2 \& Increase success rates with more engaging laboratory activities that utilize technology． （Note that this initiative also appears in the physics program review）． \& 区 Course Success Rate凹 Degrees／ Certificates Awarded \(\square\) Equity gaps \(\square\) SLO＇s \& 150 \& \[
\begin{aligned}
\& \hline \mathbf{x} \mathrm{Yes} \\
\& \square \mathrm{No}
\end{aligned}
\] \& \begin{tabular}{l}
区 Equipment
Supplies
Technology
Facilities
Professional \\
Development

Student <br>
Workers <br>
＊Use page 13 for <br>
faculty／staff <br>
hiring requests

\end{tabular} \& Purchase 10 digital cameras and adapter hardware for use in physics and astronomy lab experiments． \& \＄5，000．00 \& （10cameras） （500／camera and mounts） \& \[

$$
\begin{aligned}
& \square \mathrm{Yes} \\
& \text { 区 No }
\end{aligned}
$$
\] \& <br>

\hline
\end{tabular}

| Initiative |  | Data |  | Resources Required to Meet Initiative |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Priority | What will your program do to improve student achievement and learning？ | Which metric（s） will this initiative improve？ | How many students will this initiative directly impact？ | Do you need additional resources to meet this initiative？ | If yes，what type of resources？ | Brief description of resources needed | Cost <br> Estimate | Source of <br> Cost <br> Estimate | Has this request been made in a prior year？ | If yes， which year（s）？ |
| 6 | Continue review of current SLOs and assessments to evaluate their effectiveness in revealing significant opportunities for program performance improvement． | Course <br> Success Rate Degrees／ Certificates Awarded Equity gaps区 SLO＇s | 700 | $\begin{aligned} & \square \mathrm{Yes} \\ & \square \mathrm{No} \end{aligned}$ | Equipment Supplies Technology Facilities Professional <br> Development Student <br> Workers <br> ＊Use page 13 for faculty／staff hiring requests |  |  |  | $\begin{aligned} & \text { x Yes } \\ & \square \text { No } \end{aligned}$ | $\begin{aligned} & 2015-20 \\ & 16 \end{aligned}$ |
| 5 | Limited（staffed）open lab hours will be instituted in order to encourage students to participate in groups and have a place to study outside of class and lab hours． Estimated to directly impact a minimum of $10 \%$ of total astronomy students． | 区 Course <br> Success Rate <br> $\square$ Degrees／ <br> Certificates <br> Awarded <br> $\square$ Equity gaps <br> 区 SLO＇s | 70 | $\begin{aligned} & \square \mathrm{Yes} \\ & \square \mathrm{No} \end{aligned}$ | $\square$ Equipment $\square$ Supplies $\square$ Technology $\square$ Facilities $\square$ Professional Development $\square$ Student Workers ＊Use page 13 for faculty／staff hiring requests |  |  |  | $\begin{aligned} & \square \mathrm{Yes} \\ & \mathbf{x} \mathrm{No} \end{aligned}$ |  |

Section F - Full-Time Faculty Hire Requests

| Priority | Request Type | Discipline/Program | Brief Description | Has this position <br> been requested <br> in a past year? | If so, which <br> year(s)? |
| :---: | :--- | :--- | :--- | :--- | :--- |
| 1 | New | Astronomy | One new full-time <br> astronomy faculty <br> position is sought. The | Yes | $2015-2016$ |
| 2 | Select One |  |  | Select One |  |
| 3 | Select One |  |  | Select One |  |
| 4 | Select One |  |  | Select One |  |

Section G - Classified Hire Requests

| Priority | Request Type | Position | Full-Time <br> or Part- <br> Time | Brief <br> Description | Salary and <br> Benefits <br> Cost | Has this <br> position been <br> requested in a <br> past year? | If so, which <br> year(s)? |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | Select One |  | Select One |  |  | Select One |  |
| 2 | Select One | Select One |  | Select One |  |  |  |
| 3 | Select One | Select One |  | Select One |  |  |  |
| 4 | Select One | Select One |  | Select One |  |  |  |

## 2016-2017 Instructional Program Review

## Section H - Process Assessment

How have the changes in the program review process this year worked for your area?
This is an even more directed process than last year with an intuitive interface.

How would you improve the program review process based on this experience?
It would be helpful to have access to success rates by course mode to see how on-line courses compare with face-to-face, and to also see how ethnic groups perform when compared in this way.

## Appeals

After the program review process is complete, your program has the right to appeal the ranking of initiatives (i.e. initiatives that should have been ranked high but were not, initiatives that were ranked high but should not have been), the division's decision to support/not support program discontinuance, or the process (either within the department/program or the division) itself.

If you choose to appeal, please complete the Appeals form (Appendix E) that explains and supports your position. Forms are located at the Program Review VC website.

The appeal will be handled at the next higher level of the program review process.

## Section I - Submission Verification

Preparer:

## Jeffrey Wood

Dates met (include email discussions):
8/16/2016, 9/23/2016, 10/4/2016
List of Faculty who participated in the program Review Process:

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Hugh O'Neill
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Gabriela Navas

## Preparer Verification:

I verify that this program document was completed in accordance with the program review process.

## Dean Verification:

I verify that I have reviewed this program review document and find it complete. The dean may also provide comments (optional):

