What are the strengths of your area?:

1. Strong ties to the Agriculture industry represented by advisory committee members. Members of the Plant Science Advisory Committee represent the local industry. The experience and knowledge of the committee members will help the Agriculture faculty to make changes to the curriculum to maintain courses in the program current and relevant to the industry.

2. Several courses in the program (Ag 2, Ag 3, Ag 4 and PLSI 1) meet General Education credit. Many students take courses in the program as transferable credit to a state university, or for preparation and qualification for the Pest Control Adviser and Qualified Applicator License exams.

3. Classes for this program are offered at the Hanford Center and at the Tulare College center. Having classes at both centers makes the program more accessible to students in the surrounding communities.

What improvements are needed?:

1. Hire a full-time faculty member. The Faculty Lead in the Plant Science program retired at the end of the 2013-2014 academic year. All classes in the program are being taught by adjunct faculty. It is difficult to find adjunct faculty available to teach during the day. Limited number of adjunct faculty is available to teach all required courses in the program.

2. Updating course outlines, curriculum and Certificate Program. Various course outlines in the program need to be revised. The Certificate Program needs to be updated with input from members of the Advisory Committee. Student learner outcomes and program outcomes need to be reviewed, updated and aligned to the state's Transfer Model Curriculum in Agriculture Plant Science.

3. Increase student awareness about career opportunities in production Agriculture related to Plant Science. Develop a brochure highlighting the Plant Science Program that can be utilized for student outreach, recruitment and advisement. This brochure is needed to facilitate the student outreach and recruitment efforts at local high school programs, and local community events. It may also be used in the advisement of students by faculty in the Agriculture division and members of the Counseling division.

4. Develop a 5-year scheduling plan that incorporates all required classes in the program. This plan will facilitate the class scheduling process each semester. It may also be used by the counselors as they meet with students to form their educational plans and semester schedules.

5. Acquire tools and equipment to support practical laboratory activities. A needs assessment of needed tools and equipment for the program needs to be conducted. This needs assessment will serve as the guide to create future budgets that will include the acquisition of needed tools and equipment for practical laboratory activities.

Describe any external opportunities or challenges:

1. Increased industry need for trained program completers to enter the labor force. As the demand for a trained labor force continues to increase, ties to the local Agricultural industry have the potential to increase, thus increasing the support of local industry leaders to provide resources to properly train students to industry standards.

2. Potential for increased student outreach and recruitment from local area high schools. The local area high schools continue to maintain strong Agricultural Education Programs. This presents an opportunity to recruit students from those local programs.

External challenges of the Plant Science Program include:

1. The ability to offer classes that will meet the demands of the Agriculture Plant Science Transfer Model Curriculum. As the State approves the Transfer Model Curriculum in Agriculture Plant Science, full-time faculty and additional resources will be needed to offer the courses that will meet the demands of the program.
2. The ability to provide courses that qualify for the State of California Pest Control Adviser's examination. Additional resources will be needed to maintain courses that qualify for the State Examination for Pest Control Advisers and Qualified Pesticide Applicators relevant and in accordance to state standards.

**Overall Outcome Achievement:** The average Student Success data from three consecutive academic years is as follows: 2010-2011- 84%, 2011-2012- 82%, and 2012-2013- 81.6%. The data shows an average of 82.5% success rate in each of the years. A plan will be developed to evaluate individual program outcomes.

**Changes based on outcome** Some changes have been made based on the results of outcome assessment. Examples of this are (1) the incorporation of the use of computers and internet resources as instructional tools in the Ag 4- Soils class and (2) the addition of practical lab activities to the Ag 4- Soils and PLSI 1- Plant Science 1 classes.

**Outcome cycle evaluation:** The SLO's for many courses have been assessed. A Program Outcomes assessment cycle is being developed.

**Action:** Hire a full-time Plant Science faculty

Provide an instructional program in Agriculture Production related to Plant Science to prepare students to enter the labor force with the knowledge and skills needed by industry, or transfer to a four year institution and persue and advanced degree.

**Implementation Timeline:** 2014 - 2015

<table>
<thead>
<tr>
<th>Start Date</th>
<th>Completion Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/12/2015</td>
<td>05/11/2015</td>
<td>New Action</td>
</tr>
</tbody>
</table>

**Identify related course/program outcomes:**
- PO- Describe important modern cultural practices in leading crops which improve quality and maximize yields.
- PO- Identify food and fiber crops in the San Joaquin Valley and their economic importance to the local and state economy.
- PO- Understand the relationships between plant, soil, and water, and their impact on plant health, nutrition and the environment.

**Person(s) Responsible (Name and Position):**
Agriculture Division Faculty, Division Chair, Dean- CTE

**Rationale (With supporting data):**
The Faculty Lead in the Plant Science program retired at the end of the 2013-2014 academic year. All classes in the program are being taught by adjunct faculty.

The Agriculture and Natural Resource Sate Advisory Committee Evaluation Team made a recommendation to College of the Sequoias in their “Final Report” dated April 7, 2008.

The committee made the following recommendation (Recommendation 2-g):
As the program transitions, there must be less reliance on part-time instructors and greater commitment to full-time instructors who understand that their role will be to build a program (which includes not only instruction but recruitment and outreach, advising student clubs, building relationship with industry, developing internships, etc.).

The current College of the Sequoias Agriculture Advisory Committee continues to support the recommendation of the State Advisory Committee from 2008.

It has been a challenge for the Agriculture Division to find qualified part time instructors available to teach during the peak hours of instruction. The primary factor seems to be that most adjunct instructors are working in industry and are not available to teach during the day.

The data from the Faculty Growth Template shows a Fill Rate average of 115.3% over three consecutive academic years from 11-12 to 12-13. It also shows an average success rate of 81.3%.

The data shows a decline in E-WSCH from 10-11 to 11-12 and an increase from 11-12 to 12-13. The increase in E-WSCH in the Plant Science program from 11-12 to 12-13 is attributed to the relocation of the Agriculture Division to the Tulare College Center and offering Plant Science classes at both the Tulare College Center and the Hanford Center.

**Priority:** High
**Safety Issue:** No
**External Mandate:** No
Add Resource Request for Action

<table>
<thead>
<tr>
<th>Resource Description</th>
<th>Why is this resource required for this action?</th>
<th>Notes (optional)</th>
<th>Active</th>
</tr>
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<tbody>
<tr>
<td>Replacement full-time Plant Science faculty.</td>
<td>The Faculty Lead in the Plant Science program retired at the end of the 2013-2014 academic year. All classes in the program are being taught by adjunct faculty. It is difficult to find adjunct faculty available to teach during the day. Limited number of adjunct faculty are available to teach all required courses in the program.</td>
<td></td>
<td>Yes</td>
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</table>

**Resource Type:** Faculty - New/Replacement

**Action:** Curriculum that is current and relevant to industry

Provide curriculum that is current and relevant to the Agriculture industry that will allow the preparation of students to meet industry standards and it's aligned with the state Transfer Model Curriculum in Agriculture Plant Science.

**Implementation Timeline:** 2015 - 2016

**Start Date:** 08/10/2015

**Completion Date:** 05/16/2016

**Status:** New Action

**Identify related course/program outcomes:**

PO- Describe important modern cultural practices in leading crops which improve quality and maximize yields.

PO- Identify food and fiber crops in the San Joaquin Valley and their economic importance to the local and state economy.

PO- Understand the relationships between plant, soil, and water, and their impact on plant health, nutrition and the environment.

**Person(s) Responsible (Name and Position):** Plant Science Faculty, Division Chair, Dean- CTE

**Rationale (With supporting data):** Various course outlines in the program need to be revised. The Certificate Program needs to be restructured to be aligned with the state Transfer Model Curriculum in Agriculture Plant Science. Student learner outcomes and program outcomes need to be reviewed and updated. An assessment plan for SLO's and PO's needs to be developed and implemented to promote student success.

**Priority:** High

**Safety Issue:** No

**External Mandate:** No

Add Resource Request for Action

<table>
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<tr>
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<tbody>
<tr>
<td>Faculty time is needed to review, revised align course outlines and curriculum to the state Transfer Model Curriculum in Agriculture Plant Science.</td>
<td>We need resources to get the committee, adjunct and Division together to begin the alignment of courses to the TMC.</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Resource Type:** Technology

**Action:** Schedule sequencing of program courses

Provide students with required program classes in a sequence that can be completed within 2 academic years.

**Implementation Timeline:** 2014 - 2015

**Start Date:** 10/01/2014

**Completion Date:** 05/11/2015

**Status:** New Action

**Identify related PO:** Describe important modern cultural practices in leading crops which improve quality and maximize yields.
course/program outcomes:

PO- Identify food and fiber crops in the San Joaquin Valley and their economic importance to the local and state economy.

PO- Understand the relationships between plant, soil, and water, and their impact on plant health, nutrition and the environment.

Person(s) Responsible (Name and Position): Agriculture Faculty, Division Chair, Dean- CTE

Rationale (With supporting data): A 5-year scheduling plan that incorporates all required classes in the program is needed. This plan will facilitate the class scheduling process each semester. It may also be used by the counselors as they meet with students to form their educational plans and semester schedules.

Priority: High
Safety Issue: No
External Mandate: No

Action: Careers in Plant Science information

Increase student awareness about career opportunities in production Agriculture related to Plant Science.


Start Date: 01/12/2015
Completion Date: 05/15/2015
Status: New Action

Identify related course/program outcomes:

PO- Describe important modern cultural practices in leading crops which improve quality and maximize yields.

PO- Identify food and fiber crops in the San Joaquin Valley and their economic importance to the local and state economy.

PO- Understand the relationships between plant, soil, and water, and their impact on plant health, nutrition and the environment.

Person(s) Responsible (Name and Position): Agriculture Faculty, Division Chair, Dean- CTE

Rationale (With supporting data): Information related to careers and related job opportunities in Agriculture production is needed to inform students about the opportunities in the industry.

Priority: Medium
Safety Issue: No
External Mandate: No

Add Resource Request for Action

<table>
<thead>
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<th>Why is this resource required for this action?</th>
<th>Notes (optional)</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brochure highlighting the Plant Science program and career opportunities in the industry.</td>
<td>To provide students with relevant information about the Plant Science Program and career opportunities in the industry.</td>
<td>The resource needed is funding to develop, create and duplicated the brochure.</td>
<td>Yes</td>
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</tbody>
</table>

Resource Type: Technology