



Annual Update
Approved 9/2/08 Governing Council

This Annual update is due on March 25th of each year that your three year Program review and planning document is not due. Please email a copy of this to your Division dean, the VP of Instruction and the Academic Senate President.

1. What is the name of your Department and/or Division?

Astronomy Department Math/Science Division

2. List the names of everyone who participated in developing this annual update.

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3. Based on the elements in your Annual Update Data Sheet (Provided by IRP to your dean) and goals stated in your most recent Program Review, please identify any key successes and challenges.

- Improved and expanded our observational technology and methodology for our students.
- Increased our enrollment.
- Increased the number of sections.
- Increased our outreach program to the community.
- Our adjuncts are at their maximum allotments.

4. Are you on track for meeting the goals/targets that your program identified in its most recent Program Review? If not, please explain possible reasons why. If needed, update your goal/targets based on these reason.

We have exceeded our goals and expectations from the last program review.

5. Have you identified any new goals or projects for the program to focus on during this next year? Please explain (grants, stipends, initiatives, etc.)

We are in the process of developing several 200 level courses, so that we can offer an A.S. degree in astronomy. By Fall of 2010, we hope to have courses in Astro Imaging and Cosmology. The acquisition of two CCD cameras would be a key element for our Astro Imaging class.

6. Are there any critical issues you expect to face in the coming year? How will you address those challenges?

The main critical issue is the acquisition of the two cameras, mentioned in 5.

7. Student Learning Outcome and Assessment focus for this year:

- a. Academic areas: Identify at least one course SLO in on which to focus. Describe the assessment strategies you will use and your method of reflection and documentation for this cycle.

Astr 103, Observational Astronomy Laboratory will be the focus. Student lab reports were analyzed. The percentage of students, who analyzed the question correctly, was then obtained.

- b. Student services areas: TBD

8. **SUMMARY OF RESOURCES NEEDED TO REACH PROGRAM ACTION STEPS** (*Data resources: Educational Master Plan, GE-SLOs, SLOs; department records; Core Program and Student Success Indicators; previous Program Review and Planning reports*)

- a. In the matrices below, itemize the resources needed to reach program action steps and describe the expected outcomes for program improvement.* Specifically, describe the potential outcomes of receiving these resources and the programmatic impact if the requested resources cannot be granted.

*Note: Whenever possible, requests should stem from assessment of SLOs and the resulting program changes or plans. Ideally, SLOs are assessed, the assessments lead to planning, and the resources requested link directly to those plans.

Full-Time Faculty Positions Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
Our adjunct faculty are at their maximum allocations. We want to hire one F/T faculty member.	If we are able to hire a F/T faculty member, our enrollment will increase substantially. If we are not able to hire a F/T faculty member, our enrollment will stay as is.	This will enable us to expand the Astronomy Department and offer an A.S. degree in astronomy.

Classified Positions Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
N/A	N/A	N/A

- b. For instructional resources including equipment and materials, please list the exact items you want to acquire and the total costs, including tax, shipping, and handling. Include items used for instruction (such as computers, furniture for labs and centers) and all materials designed for use by students and instructors as a learning resource (such as lab equipment, books, CDs, technology-based materials, educational software, tests, non-printed materials). Add rows to the tables as necessary. If you have questions as to the specificity required, please consult with your division dean. Please list by priority.

Resources Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
Priority 1 Items Used for instruction by instructors and students		
<p>Item: Mac Book laptop computers-13" ZOFJ Number: 5. Vendor: Apple Unit price: \$1311 Cost for 5: \$6555 Tax: \$ 557 Total: \$7112</p> <p>Status*: new</p>	<p>These computers, when added to our 15 current laptops, will decrease the number of students using 1 computer from three or four to just two.</p> <p>If we don't get these computers, we will have 3 or 4 students to one computer, as we have now. These computers are used in labs and recitation sections.</p>	<p>The addition of more computers ties into Astr 101 SLOs #1 and #6, in which students must be able to identify constellations and recognize some of the more common Messier objects. The laptops will be supplied with Starry Night Pro, to facilitate this SLO.</p>
<p>Item: ST10XME CCD Camera Number: 2 Vendor: SBIG Unit price: \$5995 Cost for 2: \$11,090 Tax: \$ 942 Total: \$12032</p> <p>Status*: New</p>	<p>The acquisition of these cameras will facilitate imaging in our proposed Astro Imaging class. The lack of these cameras will seriously inhibit productivity in this class.</p>	<p>The acquisition of this camera ties in with Astr 101 SLO#2 and Astr 103 SLO#4 of 'analyze and evaluate the moon's phases'. This also ties in with Astr 101 SLO#4 of 'evaluate the different types of optical spectra'. In addition, this would help the Astronomy department to open a new 200 level course on astronomical imaging.</p>
<p>Item: CFW-10 filter wheel Number: 2 Vendor: SBIG Unit price: \$ 995 Cost for 2: \$1,990 Tax: \$ 169 Total: \$ 2159</p> <p>Status*: New</p>	<p>The acquisition of these filter wheels, as accessories to the ST10XME cameras, will facilitate imaging in our proposed Astro Imaging class. The lack of these filter wheels will seriously inhibit productivity in this class.</p>	<p>The acquisition of this camera ties in with Astr 101 SLO#2 and Astr 103 SLO#4 of 'analyze and evaluate the moon's phases'. This also ties in with Astr 101 SLO#4 of 'evaluate the different types of optical spectra'. In addition, this would help the Astronomy department to open a new 200 level course on astronomical imaging.</p>

Resources Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
Priority 1 Items Used for instruction by instructors and students		
<p>Item: FL-CFW8 FLTRSET 1.25" RGB + C filters Number: 2 Vendor: SBIG Unit price: \$495 Cost for 2: \$990 Tax: \$ 84 Total: \$1074</p> <p>Status*: New</p>	<p>The acquisition of these color filters, for the filter wheels, will facilitate imaging in our proposed Astro Imaging class. The lack of these filters will seriously inhibit productivity in this class.</p>	<p>The acquisition of this camera ties in with Astr 101 SLO#2 and Astr 103 SLO#4 of 'analyze and evaluate the moon's phases'. This also ties in with Astr 101 SLO#4 of 'evaluate the different types of optical spectra'. In addition, this would help the Astronomy department to open a new 200 level course on astronomical imaging.</p>
<p>Item: FL-CFW8UBVRIST 1.25" UBVRI filters Number: 2 Vendor: SBIG Unit price: \$ 995 Cost for 2: \$1990 Tax: \$ 169 Total: \$2159</p> <p>Status*: New</p>	<p>The acquisition of these photometric filters, for the filter wheels, will facilitate photometry in our proposed Astro Imaging class. The lack of these filters will seriously inhibit productivity in this class.</p>	<p>The acquisition of this camera ties in with Astr 101 SLO#2 and Astr 103 SLO#4 of 'analyze and evaluate the moon's phases'. This also ties in with Astr 101 SLO#4 of 'evaluate the different types of optical spectra'. In addition, this would help the Astronomy department to open a new 200 level course on astronomical imaging.</p>
<p>Item: Grating carousel 600/1800 l/mm Number: 1 Vendor: SBIG Unit price: \$1000 Tax: \$ 85 Total: \$1085</p> <p>Status*: upgrade</p>	<p>This filter carousel would be an upgrade for our SBIG SGS spectrograph. This upgrade will result in higher resolution and allow students to observe finer structure in stellar spectra.</p> <p>If we don't get this item, it will make it difficult for students to rigorously analyze stellar spectra.</p>	<p>The acquisition of this camera ties in with Astr 101 SLO#4 of 'evaluate the different types of optical spectra'. This would also be an invaluable addition to be used in our new Astro Imaging class.</p>
Priority 1 Total \$25,621		

	Priority 2 Items Used by instructors	
Item: LHIREs Lite Spectrograph Number: 1 Vendor: Adirondaack Astronomy Unit price: \$1295 Total Cost: \$1295 Tax: \$ 110 Total: \$1405 Status*: new	<p>This spectrograph will enable the Astronomy department to implement a new endeavor: to enable students and the public to view solar spectral lines. This unit can be used in Astr 101 and Astr 103 labs, as well as at our public astronomy events.</p> <p>If we don't get this equipment, we will be denying students and the public an opportunity to view the sun, as they have never seen it.</p>	<p>The acquisition of this camera ties in with Astr 101 SLO#4 of 'evaluate the different types of optical spectra'.</p>
Item: Planetarium shows Number: 2 Vendor: TBD Unit price: \$5,000 Cost for 2: \$10,000 Tax: \$ 850 Total: \$10850 Status*: New	<p>Our present planetarium shows are getting out of date. New shows would be concurrent with present astronomical knowledge and be more attractive to students and the general public</p>	<p>The acquisition of these shows will increase the visibility of the planetarium and extend our outreach to the public.</p>
Priority 2 Total \$12,255		

* Status = New, Upgrade, Replacement, Maintenance or Repair.

 Primary faculty contact

 Date

 Additional faculty

 Date

 Additional faculty

 Date

2008-2009 CSM Course SLO Form

Course Name: Astr 103

Course Mission/Purpose: _____

Step 1. Student Learning Outcome(s) Defined (what students will learn, know, do or value at course end)	Step 2. Assessment Tool/ Measurement Instrument (identify methodology or tool for collection of evidence of learning e.g., pre/post tests, surveys, papers, anecdotal evidence, etc.)	Step 3. Assessment of SLO(s) (what were the assessment tool results e.g., raw data, scores, etc.?)	Step 4. Timelines/ Term Assessed (list dates when assessment tool will be administered and assessment data will be collected and analyzed)	Step 5. Analyze/Evaluate Assessment Results (identify who will review and analyze data from tests, surveys, etc. What do the measurement results reveal in relation to the learning outcome?)	Step 6. Recommendation/ Action (using assessment results and analysis, what changes, if any, will be made to instruction methodologies or SLO assessment design? Or if SLO results positive, will a new SLO be identified?)
SLO #1: Identify some of the major constellations in the sky.	Lab report(s) and direct student conversation.	Examination of lab reports and direct conversation with the students was the assessment tool. All of the 35 students (100%) were able to do this.	The lab reports were graded at the end of Fall 2008 and the report results analyzed on March 25, during the Spring 2009 semester.	Prof Darryl Stanford will analyze/evaluate the data by the end of Spring 2009.	Recommendations and implementations to improve learning will occur by Fall 2009.
SLO #2: Identify some of the brighter double stars seen in the current night sky.	Lab report(s) and direct student conversation.	Examination of lab reports and direct conversation with the students was the assessment tool. All of the 35 students (100%) were able to do this.	The lab reports were graded at the end of Fall 2008 and the report results analyzed on March 25, during the Spring 2009 semester.	Prof Darryl Stanford will analyze/evaluate the data by the end of Spring 2009.	Recommendations and implementations to improve learning will occur by Fall 2009.
SLO #3: Explain the operation of a typical telescope.	Lab report(s) and direct student conversation.	Examination of lab reports and direct conversation with the students was the assessment tool. All of the 35 students (100%) were able to do this.	The lab reports were graded at the end of Fall 2008 and the report results analyzed on March 25, during the Spring 2009 semester.	Prof Darryl Stanford will analyze/evaluate the data by the end of Spring 2009.	Recommendations and implementations to improve learning will occur by Fall 2009.

<p>SLO #4:</p> <p>Analyze and understand the moon's phases.</p>	<p>Lab report(s) and direct student conversation.</p>	<p>Examination of lab reports and direct conversation with the students was the assessment tool. All of the 35 students (100%) were able to do this.</p>	<p>The lab reports were graded at the end of Fall 2008 and the report results analyzed on March 25, during the Spring 2009 semester.</p>	<p>Prof Darryl Stanford will analyze/evaluate the data by the end of Spring 2009.</p>	<p>Recommendations and implementations to improve learning will occur by Fall 2009.</p>
<p>SLO #5:</p> <p>Recognize some of the brighter Messier objects.</p>	<p>Lab report(s) and direct student conversation.</p>	<p>Examination of lab reports and direct conversation with the students was the assessment tool. All of the 35 students (100%) were able to do this.</p>	<p>The lab reports were graded at the end of Fall 2008 and the report results analyzed on March 25, during the Spring 2009 semester.</p>	<p>Prof Darryl Stanford will analyze/evaluate the data by the end of Spring 2009.</p>	<p>Recommendations and implementations to improve learning will occur by Fall 2009.</p>