

# Santa Rosa Junior College

## Program Resource Planning Process

### *Earth and Space Sciences 2022*

#### 1.1a Mission

**Updated Spring 2021**

The primary purpose of the Earth and Space Sciences' (ESS) varied programs is to provide an interdisciplinary approach to studying the Earth, Earth processes, the environment, and astronomical bodies and phenomena. We strive to promote awareness of the human impact on our surroundings and the relevance of ESS disciplines to our lives.

We strive to generate interest in science and to provide a foundation in the Earth and Space Sciences which students can ultimately apply towards an ESS-related major, GE-transfer, and/or towards pursuing personal interest goals.

Finally, ESS courses attempt to connect the academic realm with the real world, providing students with the theoretical and hands-on skills and knowledge to take what they learn in the classroom and apply it to their daily lives. We work to ensure that our students become responsible and informed global citizens.

The ideals that the ESS Department endeavors to attain include:

- Academic excellence from students and faculty
- A wide range of course offerings district-wide
- Faculty who maintain currency in their field(s)
- Providing high quality educational opportunities
- Attracting and serving a diverse student body and fostering diversity within our department

#### 1.1b Mission Alignment

**Updated Spring 2021**

*How is the program/unit mission consistent with the District's Mission and Strategic Plan Goals?*

The ESS Department Mission is consistent with the District's Mission, Institutional Goals and College Initiatives in that we are committed to promoting student learning in order to serve our diverse community. See *Ideals* above.

This aligns with Goal C of the strategic plan:

**Goal C: Serve our Diverse Communities**

Serve our diverse communities and strengthen our connections through engagement, collaboration, partnerships, innovation, and leadership.

- Identify the educational needs of our changing demographics and develop appropriate and innovative programs and services with a focus on the increasing Latino/a population.
- Contribute the richness of our multicultural community by promoting cultural initiatives that complement academics and encourage the advancement and appreciation of the arts.
- Meet the lifelong educational and career needs of our communities (e.g. seniors, merging populations, veterans, re-entry students).
- Provide relevant career and technical education that meets the needs of the region and sustains economic vitality.

## 1.1c Description

### Updated Spring 2021

The ESS Department houses multiple disciplines, including Astronomy, Earth Science, Environmental Science, Geography, Geology, Meteorology, and Physical Science. The department primarily serves general education (GE) transfer students.

Courses are offered in several different formats. Lecture, laboratory, hybrid, web-enhanced (blended), online, and field-based courses are offered to serve transfer students, students seeking a two year degree, students working towards professional development (including teachers), and self-enrichment students. The department has developed fully online options for several courses. We seek to successfully prepare students who intend to major in Earth or space science fields.

The ESS Department has 5 full time faculty: 3 at the Santa Rosa campus and 2 at the Petaluma campus. The department has between 10 and 12 adjunct faculty teaching per semester. The Department is committed to offering a wide variety of GE transfer classes at the Santa Rosa and Petaluma campuses, and online.

## 1.1d Hours of Office Operation and Service by Location

### Updated Spring 2021

#### Santa Rosa Campus:

Earth and Space Sciences instructor hours vary, but typically Monday through Thursday from 9 AM to 5 PM, and most evenings in the ESS Department offices. Typically administrative support is available Monday through Thursday from 10 AM to 5 PM, in 1813 Baker Hall. The ESS Department shares administrative support with the Life Sciences Department.

#### Petaluma Campus:

Earth and Space Sciences instructor hours vary, but typically Monday through Thursday from 9AM to 5 PM, and some evenings in the Call Building. Laboratory Coordinator is available Monday through Thursday from 9 AM to 3 PM, in Room 324 E Wing.

## 1.2 Program/Unit Context and Environmental Scan

### Updated Spring 2019

- Have there been any changes in the transfer requirements for this major, particularly at CSU or UC campuses or at other common transfer destinations in this discipline? If so, describe those.
- Are there trends in industry or technology that could affect this discipline or major?
- Are there new trends in general education or basic skills that affect courses in this discipline or major?
- What partnerships or cooperative ventures exist with local employers, transfer institutions, or other community colleges?

Courses within the ESS department primarily serve GE-transfer students. We are looking to improve our programs to better serve the student population by exploring alternate educational formats, such as increasing our online offerings and offering additional field trip opportunities. We see a growing need for knowledge and skills particularly in environmental and water-related subjects. All Earth science related disciplines provide necessary skills and knowledge for a variety of in-demand career fields. We hope to meet many of these trends by updating existing courses and developing new offerings, and creating ESS-related majors.

Have there been any changes in the transfer requirements for this major, particularly at CSU or UC campuses or at other common transfer destinations in this discipline? If so, describe those.

The ESS department houses the Environmental Studies major. We moving towards offering TMC majors for geography and environmental science. An ESS faculty member is serving as the lead reviewer for C-ID for environmental science.

Are there trends in industry or technology that could affect this discipline or major?

None

Are there new trends in general education or basic skills that affect courses in this discipline or major?

The statewide AB705 initiative may have an impact in the preparedness of students enrolling in our courses. All of our courses previously had advisories that are now obsolete due to AB705 changes.

What partnerships or cooperative ventures exist with local employers, transfer institutions, or other community colleges?

N/A

## **2.1a Budget Needs**

### **Updated in Spring 2022**

Describe areas where your budget might be inadequate to fulfill your program/unit's goals and purposes.

Our supply and graphics budget were slashed in 2018-2019. We now routinely run out of money for graphics and go into the red on supplies as well. The amount that our budget was cut is totally unrealistic. We already practice very strict limits on copier usage. Instructors are encouraged to put documents online whenever possible and to utilize very narrow margins, limited whitespace, and double-sided copies for any documents that must be copied. Nevertheless we do not have sufficient funds to meet the graphics needs of our department.

We typically use the supply budget for office supplies and for replacement of various consumables and small demo equipment that breaks. We have foregone many small purchases, and people have purchased things with their own money that would normally be reimbursed. This is unsustainable in the long run, and our supply and graphics budgets need to be reinstated.

The study of Earth and Space is most effective when students experience the subject outside the classroom by attending field trips. Field trips are currently offered in several classes including geology, environmental science and astronomy. In most cases, students are required to provide their own transportation in order to participate in field trips. The Department would like to provide transportation for class field trips, in addition to expanding our field trip offerings. Additional funds are needed for vehicle expenses, which cannot be charged to students according to the California Code of Regulations.

The Department has acquired a great deal of new equipment, including telescopes and microscopes that need regular repair and maintenance. We recently lost our telescope technician (retirement incentive) and there are no plans to replace them. We now have no one on campus trained in telescope maintenance or trouble shooting. In order to protect our

investment in new equipment, we need to establish a maintenance and repair budget so that equipment can be serviced on an annual basis.

The department has 13 petrographic microscopes, 6 or 7 are in dire need of refurbishment. Six of the 7 do not turn on at all, and all of them are out of visual alignment. Instructors would like to incorporate microscope based activities into laboratory for GEOL 1L, and currently half the microscopes cannot be used at all.

If you need additional funds, please explain.

We need a restoration of supply and graphics to at or near our 2017-2018 levels.

We need creation of a maintenance fund that would be used to maintain telescopes and microscopes in good working order. We also need money to pay a contractor to help with setup and maintenance of our AR sandboxes.

Additional funds are needed to cover vehicle expenses and to augment student costs for existing and future field trips.

## 2.1b Budget Requests

Rank	Location	SP	M	Amount	Brief Rationale
0001	ALL	04	01	\$5,000.00	Maintenance budget for telescope and other equipment maintenance.
0002	Santa Rosa	06	01	\$2,000.00	Restoration of Budget, Supply, and Field Trip funds close to 2017-2018 levels.
0003	ALL	02	01	\$3,000.00	Expand field trip offerings for ENVS 12, GEOL 1L, GEOL 7 (additional sections / different locations), GEOL 11, ASTRON 12 (different locations)

## 2.2a Current Classified Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Coordinator, Science Labs	15.00	12.00	Supply ordering, equipment organization, helps with facilities, lab, and classroom setup (Petaluma).

## 2.2b Current Management/Confidential Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Department Chair	14.40	10.00	Budget/financial, scheduling, hiring, faculty and staff evaluations, facilitate regular department meetings, coordinate adjunct faculty, etc.
Department Chair (summer)	2.90	2.00	Budget/financial, scheduling, hiring, faculty and staff evaluations, facilitate regular department meetings, coordinate adjunct faculty, etc.

## 2.2c Current STNC/Student Worker Positions

Position	Hr/Wk	Mo/Yr	Job Duties
----------	-------	-------	------------

## 2.2d Adequacy and Effectiveness of Staffing

## Updated in Spring 2022

Does the program have adequate classified, management, STNC staff, and student workers to support its needs? If not, explain program/unit needs.

No.

We lack administrative support, and rely entirely on AA's from other departments.

We lack an instrument technician to maintain department equipment.

We lack a planetarium technician to keep the planetarium in working order.

We want to hire a student worker[s] or STNC to support our lab classes but our woefully low budget can't support this.

Does your program/unit have any unfilled vacancies or positions that have been eliminated? If so, how are you accomplishing the work that must be performed? What impact does this have on your program/unit?

Yes. We currently have no Administrative Assistant and as such this work is falling to the department chair and other ESS Dept. and district staff. We also lost our instrument technician (there are no plan to replace them) and as a result, maintenance on telescopes and microscopes is not being completed. Therefore, we are not accomplishing the work that must be performed. Instructors are fixing issues that they can on the fly, as encountered. Larger issues - beyond instructor experience - are not being fixed. This impacts our program/unit by eroding morale, costing more money in the long run due to deferred maintenance/equipment failure, and resulting in worse outcomes for students.

## 2.2e Classified, STNC, Management Staffing Requests

Rank	Location	SP	M	Current Title	Proposed Title	Type
0001	Santa Rosa	08	07		Administrative Assistant	Classified
0002	ALL	04	07		Instrument Technician	Unknown
0003	Santa Rosa	04	01		Planetarium Technician	Classified
0004	Santa Rosa	04	07		Astronomy Laboratory Assistant	STNC

## 2.3a Current Contract Faculty Positions

Position	Description
Geology Instructor	Rebecca Perlroth, GEOL at the Santa Rosa campus. Current department chair.
Geography / Environmental Science Instructor	Katie Gerber, GEOG and ENVS at the Santa Rosa campus.
Astronomy Instructor	Keith Waxman, ASTRON at the Santa Rosa campus.
Astronomy Instructor (Petaluma)	Laura Sparks, ASTRON at the Petaluma campus.
Earth Science Instructor (Petaluma)	David Kratzmann, GEOL and ENVS at the Petaluma campus.



## 2.3b Full-Time and Part-Time Ratios

Discipline	FTEF Reg	% Reg Load	FTEF Adj	% Adj Load	Description
ASTRON	2.0000	41.0000	2.9100	59.0000	Astronomy has two full time instructors. Both Astronomy FT instructors regularly perform overload assignments to attempt to staff our classes. We are constantly having difficulty finding enough adjunct instructors to staff our Astron classes.
ENVS	1.0000	77.0000	0.3000	23.0000	Two full time instructors each teach a few ENVS classes as part of their load.
ERTHS	0.0000	0.0000	0.0000	0.0000	We are not currently offering ERTHS classes.
GEOG	0.5000	29.0000	1.2000	71.0000	One full time instructor teaches a few geography classes as part of their contract load.
GEOL	1.5000	48.5000	1.5900	51.5000	Most geology classes are taught by full time instructors as part of their contract load, but one has 36% release time due to chair duties. We are currently having difficulty finding adjunct instructors to teach geology.
METRO	0.0000	0.0000	0.2000	100.0000	All meteorology classes are taught by adjunct instructors. There is no full time instructor with meteorology subject matter expertise.
PHYSC	0.0000	0.0000	0.2000	100.0000	When Physical Science classes are taught, they are taught solely by adjunct instructors.

## 2.3c Faculty Within Retirement Range

**Updated in Spring 2022**

One full-time astronomy faculty member and full-time one geography/environmental science instructor are within retirement range. There are 5 associate faculty members within retirement range (55+ years).

## 2.3d Analysis of Faculty Staffing Needs and Rationale to Support Requests

**Updated in Spring 2022**

**ASTRON** – Historically, it has been difficult to staff classes in this discipline due to a lack of available qualified instructors. Specifically, very few people possess a graduate degree in Astronomy and/or Physics, and SSU does not offer a graduate degree in these disciplines. We generally conduct associate instructor interviews whenever a qualified candidate applies for the pool. Interviews were last conducted in April 2019 and no one was added to the pool due to a lack of qualified candidates. We currently have four associate astronomy instructors who regularly teach for us (two also teach at other institutions). One of them lives in San Mateo, and we went to great lengths to recruit them to come teach our weekend classes. Two of our current associates are in retirement range. Additional associate interviews will be conducted whenever a qualified applicant applies.

**ENVS** – Both faculty members that teach ENVS have split assignments (e.g ENVS/ Geog or ENVS / Geol). The minimum qualifications for ENVS are broad and instructors in geology and geography are often able to teach ENVS as well. We currently have adequate associates available for this discipline. Interviews were conducted in Spring 2018, and one new associate from this hiring round has been teaching with us since the Fall of 2019.

**GEOG** – We currently have adequate staffing for geography, but 2 of our geography associates are within retirement range. Associate instructor interviews were last conducted in April 2019 and no one was added to the pool due to a lack of qualified candidates.

**GEOL** – As of the end of Spring 2021, we have a shortage of staffing in this discipline. Interviews were most recently conducted in April 2019 and no one was added to the pool due to a lack of qualified candidates.

**METRO** – We have no contract faculty in meteorology. We have just one associate instructor in meteorology, but he is within retirement age. Due to budget cuts and reduced meteorology offerings, we have adequate coverage with our existing associate instructors. Our current adjunct is in retirement age.

### 2.3e Faculty Staffing Requests

Rank	Location	SP	M	Discipline	SLO Assessment Rationale
0001	Santa Rosa	02	01	ASTRON	An additional instructor will allow us to bring stability and predictability to the class schedule.

## 2.4b Rationale for Instructional and Non-Instructional Equipment, Technology, and Software

Updated in Spring 2022

### INSTRUCTIONAL EQUIPMENT

**Full classroom technology refresh including Solstice.** We have requested this for 3 classrooms/labs in Lark Hall, which are slated for technology upgrades in the near future, as all classrooms and lab spaces are outdated. 2009 is priority #1, and is a 95 seat lecture hall utilized by the Earth & Space Sciences Department and many other departments across campus. 2039 is priority #2, and this room is used by Astronomy, Environmental Science, and Materials Science. 2049 is priority #3, utilized by Geography and Environmental Science. All classrooms should have Solstice included in the upgrade.

**Telescopes for Astronomy labs.** The department received funding for 10 new telescopes that have been ordered in 2022, six of which have been received. We are still in need of 1 more that we were not able to purchase this cycle due to a lack of funding. We need funds to complete our transition from old outdated technology to new equipment.

**Personal solar telescopes for Astronomy labs.** Solar telescopes would enable us to view the Sun safely in our Astron 4L, Astron 3L, and Astron 12 labs without setting up the larger bulkier telescopes with a large footprint. Also, students could study solar features not visible in our current neutral density filters such as small prominences and photosphere granularity.

**Digital SLR Cameras for Astronomy labs.** A set of used Digital SLR cameras was purchased several years ago using funding from the Friends of the Petaluma Campus trust. Older, used cameras were purchased to save money. These will need to be replaced with newer models within the next five years as they become outdated and begin to fail. This supports Student Learning Outcomes for Astronomy. Four new cameras were purchased in 2018, so we still need seven more. Qty. 7 @ \$1,500 each = \$10,500

**Laptops for Astronomy labs.** Laptops are needed to support labs conducted with the digital cameras. This supports Student Learning Outcomes for Astronomy.

**HD projector and projector screen.** The projector and screen were removed during a recent technology make-over in PC211 including a high resolution TV (which is now also the only projection system for this classroom). The TV is small and positioned such that students have difficulty viewing it. The TV is fine for high resolution and fine color viewing, but adding an HD projector and projector screen into the room will facilitate student learning and accessibility of the subject matter material. The projector and screen will provide larger images (larger screen) in a more convenient location in the classroom.

**Upgrade Planetarium.** The SRJC planetarium needs equipment upgrades and refurbishment. This facility is integral to the Astronomy program here at SRJC, and is regrettably no longer

meeting its potential by serving the community. The planetarium is in disrepair due to long-standing neglect and starvation of resources.

#### **NON-INSTRUCTIONAL EQUIPMENT**

**Standing Desk or Standing Desk Adaptor for room 2022.** As part of the college's commitment to health and wellness, we need to provide standing desks for faculty who request them/ Our Department budget is very limited and cannot absorb these one time costs.

## **2.4c Instructional Equipment Requests**

Rank	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
0001	Santa Rosa	04	01	full classroom technology refresh including Solstice + Hyflex	1	\$41,500.00	\$41,500.00	R. Perloth	Lark 2009	K. Gerber & R. Perloth
0002	ALL	01	01	ITG APPROVED: DSLR Cameras with modifications	7	\$1,500.00	\$10,500.00	L. Sparks	Lark Storage	L. Sparks
0003	Santa Rosa	04	01	full classroom technology refresh including Solstice + Hyflex	2	\$37,500.00	\$63,000.00	R. Perloth	Lark 2039 & 2049	K. Gerber & R. Perloth
0004	ALL	04	01	Equatorial Telescope Wedge	1	\$600.00	\$600.00	L. Sparks	Lark Storage	L. Sparks & K. Waxman
0005	ALL	02	01	Replacement telescopes and accessories	1	\$3,000.00	\$3,000.00	L. Sparks	Lark Storage	K. Waxman & L. Sparks
0006	ALL	04	01	Laptop Charging Cart	1	\$2,000.00	\$2,000.00	L. Sparks	Lark Storage	K. Waxman & L. Sparks
0007	ALL	04	01	ITG APPROVED: Laptops for image processing	10	\$1,500.00	\$15,000.00	L. Sparks	Lark 2039	K. Waxman & L. Sparks
0008	ALL	02	01	Coronado Personal Solar Telescopes (with tripods)	2	\$1,000.00	\$2,000.00	L. Sparks	Lark Storage	K. Waxman & L. Sparks
0009	Petaluma	04	01	add HD projector and projector screen	1	\$30,000.00	\$30,000.00	D. Kratzmann	PC211	D. Kratzmann & L. Sparks
0010	Santa Rosa	04	01	Brunton Instructor Kit	1	\$900.00	\$900.00	K Gerber	Lark Storage	K Gerber
0011	Santa Rosa	04	01	Solar Classroom Kit	1	\$550.00	\$550.00	K Gerber	Lark Storage	K Gerber
0012	Santa Rosa	04	01	Alternative Energy Kit	1	\$750.00	\$750.00	K Gerber	Lark Storage	K Gerber
0013	ALL	04	01	Earth Sciences Models	1	\$1,350.00	\$1,350.00	K Gerber	Lark Storage	K Gerber

### 2.4d Non-Instructional Equipment and Technology Requests

Rank	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
------	----------	----	---	------------------	-----	-----------	------------	-----------	------------	---------

### 2.4f Instructional/Non-Instructional Software Requests

Rank	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
------	----------	----	---	------------------	-----	-----------	------------	-----------	------------	---------



## 2.5a Minor Facilities Requests

Rank	Location	SP	M	Time Frame	Building	Room Number	Est. Cost	Description
0001	Santa Rosa	06	07	Urgent	Lark Hall	all	\$0.00	Paint exterior and interior of building. Replace rotted wood trim.
0002	Santa Rosa	02	01	Urgent	Lark Hall	2009	\$0.00	Replace existing carpet and countertop,replace chair cushions and back wall material.
0003	Santa Rosa	03	05	Urgent	Lark Planetarium	Planetarium	\$4,000,000.00	(MEASURE H) Planetarium: Perform renovation to Planetarium space: Fix roof, fix ventilation, replace dome, knock out decorative interior wall, replace chairs in new layout, replace sound system and lighting system, redo electrical system.
0004	Santa Rosa	04	05	1 Year	Lark Hall	Lab/Storage space	\$0.00	Repair and replace SAREX equipment for communicating with Astronauts on board the International Space Station (used in outreach and potentially in planetarium shows)
0005	Santa Rosa	02	01	1 Year	Lark	2042, 2046	\$0.00	Replace existing display cases with ones with lighting and glass doors
0006	Santa Rosa	02	01	Urgent	Lark Hall	Room 2030	\$0.00	MEAS H: Convert room to a demonstration classroom outfitted for interactive learning with movable tables and chairs. Anticipated to be completed in summer 2019.

## 2.5b Analysis of Existing Facilities

### Updated Spring 2022

The ESS Department is located in the southern wing of Lark Hall. Facilities that the Department regularly uses include a 90-person lecture hall (2009), four lab and or lab/lecture classrooms (2030, 2039, 2042, and 2049), and a storage and work area. The Department offices include 6 offices and an open work space. These offices are shared with Planetarium staff at times when the district employs them. Although there is adequate space at current staffing and class offering levels, the building and its associated equipment are out-of-date. Additionally, we will be sharing our space with Physics and Materials Engineering for the next year. To accommodate the new personnel there are urgent upgrades.

**Bathrooms.** The Lark hall bathrooms resemble a dungeon. They often flood, have an unpleasant odor, and poor lighting. The feminine hygiene receptacles suffer from black mold and pose a hazard. There are intermittent water pressure failures. They do not feel safe; the floors pose a trip and slip hazard. They need to be demolished and replaced.

**Upgrade Planetarium.** The SRJC planetarium needs equipment upgrades and refurbishment. This facility is integral to the Astronomy program here at SRJC, as well as serving community outreach efforts, although community outreach has been suspended due to lack of financial support. It has become very difficult to find replacement parts for the outdated and obsolete equipment. We hope to obtain funding to renovate the planetarium in the near future. A planetarium upgrade can likely be completed for under 4 million dollars. When compared to the cost of building a new planetarium, this is a great deal.

**Lecture Classroom 2009:** This classroom is used for lecture-based courses by ESS and other departments. The Department would like to replace the existing carpet with either new carpet or some other form of flooring. The chair cushions also need replacement. Several chairs are broken and the fold-down desk non-functional. The countertop is unsightly and badly worn and there are stains on the back walls. The room is in desperately urgent need of renovation.

**New Paint and Building Maintenance:** The outside of the building is in serious need of cleaning and painting. There are areas where the wood trim is decayed and needs to be replaced. The interior offices and classrooms are also in need of painting.

**Rock Displays.** New efforts are being made to beautify the ESS/Geology area as a result of recent donations. We would like to display and highlight the department's collection (especially the new fluorescing samples) in lighted display cases. These could be installed in 2042 to replace the existing display cases, and in 2046 to replace open shelves and to better utilize space.

**SAREX.** SAREX equipment is needed for communicating with Astronauts on board the International Space Station (used in outreach and potentially in planetarium shows)

## 3.1 Develop Financial Resources

**Updated Spring 2022**

***Future funding:*** *What programs or concepts do you want to seek grant funding for?*

The ESS Department is interested in expanding funding for field programs, equipment, and facilities upgrades. Many of these items are also included within the budget request section.

Fund for Field Programs / Field Trips. ESS currently offers field trips and/or programs through geology, environmental science and astronomy classes. Because vehicle costs cannot be passed on to students, the Department pays for these costs out of our normal operating budget. In addition to providing funding for transportation, we would like to expand field trip offerings to other classes.

Equipment for Lab classes. A long term goal of the Department has been to develop lab components for Physical Geography (Geog 4) and Environmental Science (ENVS 12). A new lab component for GEOG 4 has been written and passed through Cluster Tech Review, and is waiting to get onto the CRC agenda. These labs will require new equipment for the Department including weather related equipment (thermometers, sling psychrometers), mapping equipment (compasses), pollution testing equipment (water/air), energy related equipment (solar cells, other), etc.

Student Assistant funding. Readers are now being reinstated in some classrooms. Instructors that teach larger lecture classes are interested in having student assistants within the class to facilitate with group work and in-class activities. This would be different than reader funding.

Planetarium upgrades and operating expenses. The Planetarium is in need of serious upgrades to its facilities and equipment. If a renovation is funded by the district, we would like to pursue grant funding to launch new programs and aid with covering operating expenses for the first few years in the relaunched planetarium.

Expand the Outdoor classroom. Expanding the use of SRJC's facilities and grounds as outdoor classrooms would greatly enhance student learning. Ideas for this include the following.

- Install native plant gardens around the campus to study climate change (e.g. STEM / Pepperwood grant). These could be incorporated into physical geography, environmental science, and meteorology classes.
- Sustainability campus map. Create a sustainability map for the campus that identifies the various sustainability features (e.g. solar panels, energy conservation, recycled materials, etc.). Katie Gerber regularly takes students on a sustainability tour of the Santa Rosa campus but would like to create signage and a more permanent map that can be posted on the school's webpage.

***Current Grant Funding:*** *In order to capture SRJC's diverse partnerships and funding please provide the following information on funding or grant partnerships your department currently receives.*

None. The ESS Department does not have any existing grant funding.

## 3.2 Serve our Diverse Communities

Updated Spring 2022

### Goal C: Serve our Diverse Communities

Serve our diverse communities and strengthen our connections through engagement, collaboration, partnerships, innovation, and leadership.

- Identify the educational needs of our changing demographics and develop appropriate and innovative programs and services with a focus on the increasing Latino/a population.
- Contribute the richness of our multicultural community by promoting cultural initiatives that complement academics and encourage the advancement and appreciation of the arts.
- Meet the lifelong educational and career needs of our communities (e.g. seniors, merging populations, veterans, re-entry students).
- Provide relevant career and technical education that meets the needs of the region and sustains economic vitality.

Our position announcements (both faculty and staff) stress the importance of sensitivity to diversity. During our screening and interview processes, we strive to assess each candidate's sensitivity and experience with diversity.

Lack of diversity is an issue within the sciences in general. Progress has been made in encouraging greater participation by women in science. The composition of our Department is indicative of that change. Currently there are three full time female instructors and several female adjunct instructors. Although progress has been made with gender diversity, there traditionally has not been a lot of ethnic or cultural diversity within our fields. There are organizations that are working on the national and regional level to encourage greater participating in the science from other cultural and ethnic groups.

Although the Planetarium has been shut down due to lack of funding, we were attempting to volunteer to put on public shows pre-covid. We had worked hard to recruit a Spanish-language presenter, and were about move forward when Covid hit. We hope to resume this effort soon.

## 3.3 Cultivate a Healthy Organization

Updated in 2022

### Goal F: Cultivate a Healthy Organization

*Cultivate an inclusive and diverse organizational culture that promotes employee engagement, growth, and collegiality.*

- Foster an environment focused on collegiality and mutual respect in regards to cultural and individual perspectives.

- Recruit and hire outstanding faculty and staff and implement an exemplary Professional Development Program for all employees.
- Establish robust programs to improve the health and wellness of students and employees.
- Increase safety planning, awareness, and overall emergency preparedness.

The department supports professional development of our staff by encouraging them to complete health, hazards, and safety trainings. In 2019 the Earth & Space Sciences department fielded a fitness team and participated in the six-week fitness challenge. This spurred many conversations about health and wellness. We have also had discussions in department meetings and through email about the Illness and Injury Prevention Program. In AY 21/22, one of the contract faculty members joined the FitSRJC committee to continue work on institutional health of employees.

### 3.4 Safety and Emergency Preparedness

**Updated Spring 2022**

#### **Injury and Illness Prevention Program (IIPP)**

*The District's Injury and Illness Prevention Program is found in District Policy 6.8.2 and Procedure 6.8.2P. This program needs to be reviewed with each employee at least once per year. Identify the steps that have been taken to review this program with employees in your department this year. Contact Environmental Health and Safety if you need assistance (524-1654).*

The ESS Department discussed the IIPP Policy and Procedure during a department meeting on March 29, 2019. The department chair sent out the policy for all employees to review on March 9th, 2019.

#### **Safety Trainings**

*Per the District Injury and Illness Prevention Program (IIPP), what safety trainings does your department require? Contact Environmental Health and Safety if you need assistance (524-1654).*

The Department conducts off campus courses and field trip courses that are offered in remote locations. CPR and First Aid Training should be required for instructors that participate in field trips and off campus courses. Ideally the District would offer training to faculty and staff or provide reimbursement for such programs.

Training. Several faculty members have been trained in First Aid and CPR although their training is not necessarily up-to-date. This includes Laura Sparks (Spring 2018), Michael Healy (2017), Rebecca Perloth (6/2013) and Katie Gerber (6/2013). In addition, Rebecca and Katie participated in a Wilderness First Aid Training course in February of 2016. In AY 21/22, faculty participated in an online COVID prevention training.

First Aid Kits. The Department is in need of wilderness first aid kits that are more robust than the vehicle based first aid kits provided for our field based programs. These kits need to be portable so they can be taken on hikes in remote areas. The previous EHS Department Director indicated that they would be willing to put together or purchase several portable first aid kits for the Department.

Emergency Procedures. There is a need to develop emergency procedures for classes that travel to remote areas. With the Geology 7 field trip course we travel on back roads and hike in areas where we

do not have cell coverage. The Department would assist EHS with the development of these procedures.

### **Building and Area Safety Coordinators**

List your Building and Area Safety Coordinators below. Include Name, Building, Building Safety Coordinator (BSC) Area, Area Safety Coordinators (ASC) Area, Department, and any specific areas of responsibility.

ESS is not aware of having an active BSC or ASC.

## **3.5 Establish a Culture of Sustainability**

### **Updated Spring 2022**

#### **Goal E: Establish a Strong Culture of Sustainability**

Establish a culture of sustainability that promotes environmental stewardship, economic vitality, and social equity.

- Expand, support, and monitor district-wide sustainability practices and initiatives.
- Infuse sustainability across the curriculum and promote awareness throughout District operations.
- Promote social and economic equity in the communities we serve.
- Ensure economic sustainability by leveraging resources, partnering with our

Describe and quantify how your department, program, or unit contributes to SRJC's Sustainability Goal. Consider curriculum, office practices, purchasing, building operations and maintenance, and other green practices. When specific budget, staffing, facilities, equipment or technology resources are required, please submit those requests in Section 2: Resources. For more information go to: [www.santarosa.edu/sustainability](http://www.santarosa.edu/sustainability).

The ESS Departments continues to address sustainability within our offices and classrooms by reducing paper use, recycling in our office area and in all ESS classrooms, and buying recycled office products when available. Below is an update of Department efforts over the past year.

Reducing Paper Use: The ESS Department encourages faculty to reduce their paper use and move to online distribution of material via Canvas. Our network printer is set up to print double-sided and faculty is encouraged to use this function when appropriate. In addition, we encourage the use of reused paper in the printer for draft copies.

Office Supplies: The department gives preference to products made with recycled content including paper products, manila folders, hanging file folders, staplers, scissors and even tape. We have moved to refillable dry-erase pens for in-class use, and refillable correction tape for office use. In general, the department is frugal in their buying habits and does not buy unnecessary goods.

Recycling. The Department participates in the campus recycling program for office paper, cardboard, and bottles and cans. Other recycling opportunities both on campus and off are also utilized by department staff. Batteries, toner cartridges, old compact discs are collected and recycled. An ESS Department member takes home plastic bags and certain other recyclables to recycle at home.

Curriculum: Environmental topics such as water, resource use, energy, climate, and human impact on the environment are a natural fit within many of the Earth Science courses. These topics are discussed to varying degrees in Astronomy, Environmental Science, Geography, Geology and Meteorology. Environmental Science is one of the core courses in the Environmental Studies major. ENVS 8, Climate Change will be added to the major in 2022-2023. Although it is an interdisciplinary major, ESS faculty coordinate the major and advise students. An ESS faculty member currently teaches the Environmental Forum (ENVST 40) course in the major as well.

Involvement with District Sustainability: Katie Gerber serves on the District's Sustainability Committee at the Santa Rosa campus. In addition, David Kratzmann has been involved with the Petaluma Sustainability Task Force at the Petaluma campus (**note: is this Task Force still active?**)

## 4.1a Course Student Learning Outcomes Assessment

### Reviewed Spring 2022

- SLO assessments are now archived in Formstacks and are available for viewing at slo.santarosa.edu.
- **How have course SLO assessment results over the past three years, including the current year, been used to improve student learning at the course level? (Note: All assessments should be documented in the SLO Assessment Tracking System in SharePoint.)**

SLO assessments are used by individual instructors to monitor their classes and to make changes as needed. In some cases the assessments provide baseline data and no specific changes are made. In other cases, the instructor is attempting to assess a particular technique or topic and uses the information to make changes within their classes. The Department discusses SLO Assessments regularly at department meetings. Instructors within individual disciplines engage in regular, ongoing discussions about improving course content and assessment techniques based on the results of SLO assessments.

- **If the curriculum is sequenced through prerequisite relationships, do course SLOs align from one course to the next in the sequence? Has this sequence or any part of a sequence been assessed in the past three years, including the current year? If so, describe how the results have been used to improve student learning.**

The ESS Department has prerequisite or concurrent enrollment requirements for lab classes. The SLOs of lab courses align with the related lecture. There are no sequenced courses within the department.

- **ACCJC Accreditation Standards require an ongoing, systematic cycle of assessment of all courses. At SRJC, our cycle is that at least one SLO in every course must be assessed every six years. In the text block provided, describe your six-year cycle of assessment. You can copy and paste into the text block a chart or a spreadsheet, which might be the easiest thing to do.**

Based on changes to ACCJC's expectations regarding SLOs, the department currently plans to assess all SLOs in all courses taught by full time faculty every year. The department plans to assess all SLOs in courses taught only by adjuncts at least once every three years on a case-by-case basis as funding for adjunct SLO assessment is made available.

## 4.1b Program Student Learning Outcomes Assessment

Reviewed Spring 2022

- **In the text block provided, describe your department/discipline six-year cycle of assessment.**

We plan to assess the Environmental Studies major once every three years, starting in the 2022-2023 academic year.

- **What certificates/majors(s) has the program/unit assessed over the past three years?**

We have not assessed any majors in the past three years.

- **How have the results been used to improve student learning at the certificate/major level?**

Although we have not formally compiled the course SLO assessment results into a major assessment, we have participated in an ongoing dialog about ways to improve the Environmental Studies major. We have added a new course, Global Climate Change, to our department's offerings in reponse to these discussions. We plan to add this course to the major shortly.



## **4.1c Student Learning Outcomes Reporting**

Type	Name	Student Assessment Implemented	Assessment Results Analyzed	Change Implemented
Course	ASTRON 3 - #1 (LS)	Fall 2012	Spring 2013	Fall 2012
Course	ASTRON 3 - #1 (LS)	Fall 2013	Spring 2014	Spring 2014
Course	ASTRON 3 - #2 (LS)	Spring 2011	Spring 2011	Fall 2011
Course	ASTRON 3 - #2	Spring 2014	Summer 2014	Fall 2014
Course	ASTRON 3 - #2 (KW)	Fall 2015	Spring 2016	N/A
Course	ASTRON 3 - #3 (LS)	Fall 2010	Fall 2010	N/A
Course	ASTRON 3 - #3 (LS)	Fall 2011	Spring 2012	Spring 2012
Course	ASTRON 3 - #3 (KW)	Fall 2011	Fall 2011	N/A
Course	ASTRON 3 - #3 (KW)	Fall 2014	Fall 2014	N/A
Course	ASTRON 3L - #1	Spring 2014	Spring 2014	Fall 2014
Course	ASTRON 3L - #2	Spring 2014	Spring 2014	Fall 2014
Course	ASTRON 3L - #3	Spring 2014	Spring 2014	Fall 2014
Course	ASTRON 3L - #3	Fall 2013	Fall 2013	Spring 2014
Course	ASTRON 3L - #3	Fall 2013	Fall 2013	Spring 2014
Course	ASTRON 4 - Waxman	Spring 2009	Spring 2009	Spring 2010
Course	ASTRON 4 - #1 (LS)	Spring 2013	Summer 2013	Fall 2013
Course	ASTRON 4 - #2	Fall 2014	Fall 2014	Spring 2015
Course	ASTRON 4 - #3	Spring 2014	Spring 2014	Fall 2014
Course	ASTRON 4 - #4 (LS)	Fall 2010	Fall 2010	Spring 2011
Course	ASTRON 4 - #4 (LS)	Spring 2011	Summer 2011	Fall 2011
Course	ASTRON 4 - #4 (LS)	Fall 2011	Spring 2012	Spring 2012
Course	ASTRON 4L - #1 (LS)	Spring 2011	N/A	N/A
Course	ASTRON 4L - #2 (AP)	Fall 2014	Fall 2014	N/A
Course	ASTRON 4L - #2 (AP)	Fall 2014	Spring 2015	Fall 2015
Course	ASTRON 12 - #1 (LS)	Spring 2011	Summer 2011	N/A
Course	ASTRON 12 - #1 (KW)	Spring 2011	Summer 2011	N/A
Course	ASTRON 12 - #1 (KW)	Fall 2011	Spring 2012	Spring 2012

Type	Name	Student Assessment Implemented	Assessment Results Analyzed	Change Implemented
Course	ASTRON 12 - #1 (LS/JF)	Fall 2011	Spring 2012	Spring 2012
Course	ASTRON 12 - #2 (KW)	Fall 2012	Fall 2012	N/A
Course	ASTRON 12 - #3 (LS)	Fall 2013	Fall 2013	Spring 2014
Course	ASTRON 12 - #4	Spring 2014	Spring 2014	Fall 2014
Course	ASTRON 12 - #5	Spring 2014	Spring 2014	Fall 2014
Course	ASTRON 12 - #5 (LS)	Fall 2014	Fall 2014	Spring 2015
Course	ENVS 12 - #1	Fall 2013	Spring 2014	Spring 2015
Course	ENVS 12 - #2	Fall 2013	Spring 2014	Spring 2014
Course	ENVS 12 - #3	Spring 2014	Summer 2014	Fall 2014
Course	ENVS 12 - #4	Fall 2013	Spring 2014	Spring 2014
Course	ENVS 12 - #5	Spring 2014	Summer 2014	Fall 2014
Course	ENVST 40 - #1	Spring 2014	Summer 2014	Spring 2015
Course	ERTHS 49	Spring 2014	N/A	N/A
Course	ERTHS 85.1 - #1	Fall 2014	Fall 2014	Fall 2015
Course	ERTHS 85.1 - #2	Fall 2013	Fall 2013	Fall 2014
Course	ERTHS 85.1 - #3	Fall 2014	Fall 2014	Fall 2015
Course	ERTHS 85.1 - #4	Fall 2012	Spring 2013	Fall 2013
Course	ERTHS 85.1 - #5	Fall 2014	Fall 2014	Fall 2015
Course	ERTHS 85.2 - #1	Spring 2014	Spring 2014	Spring 2015
Course	ERTHS 85.2 - #2	Spring 2014	Spring 2014	Spring 2015
Course	ERTHS 85.2 - #3	Spring 2014	Spring 2014	Spring 2015
Course	ERTHS 85.2 - #4	Spring 2011	Spring 2011	Spring 2012
Course	GEOG 3 - #2	Fall 2015	Spring 2016	N/A
Course	GEOG 3 - #5	Fall 2014	Fall 2014	Spring 2015
Course	GEOG 4 - #2	Spring 2014	Summer 2014	Fall 2014
Course	GEOG 4 - #3	Spring 2010	N/A	N/A
Course	GEOG 4 - #3	Spring 2011	Summer 2011	Fall 2011

Type	Name	Student Assessment Implemented	Assessment Results Analyzed	Change Implemented
Course	GEOG 4 - #3	Spring 2011	Summer 2011	Fall 2011
Course	GEOG 4 - #4	Fall 2013	Spring 2014	Fall 2014
Course	GEOG 4 - #5	Spring 2014	Summer 2014	Fall 2014
Course	GEOG 7 - #1	Spring 2014	Spring 2014	N/A
Course	GEOG 7 - #2	Fall 2014	Spring 2015	Fall 2015
Course	GEOG 7 - #3	Fall 2014	Spring 2015	Fall 2015
Course	GEOG 7 - #4	Spring 2014	Spring 2014	N/A
Course	GEOG 7 - #5	Fall 2014	Spring 2015	Fall 2015
Course	GEOL 1 - #1	Spring 2014	Spring 2014	Fall 2014
Course	GEOL 1 - #2	Fall 2013	Fall 2013	Spring 2014
Course	GEOL 1 - #3	Spring 2012	Summer 2012	Fall 2012
Course	GEOL 1 - #4	Spring 2014	Summer 2014	Fall 2014
Course	GEOL 1L - #1	Spring 2012	Spring 2012	Fall 2012
Course	GEOL 1L - #1	Spring 2012	Spring 2012	Fall 2012
Course	GEOL 1L - #2	Spring 2011	Spring 2011	Fall 2011
Course	GEOL 1L - #2	Fall 2011	Summer 2011	Spring 2012
Course	GEOL 1L - #2	Spring 2013	Spring 2013	Fall 2013
Course	GEOL 1L - #3	Spring 2014	Summer 2014	Fall 2014
Course	GEOL 1L - #4	Spring 2014	Summer 2014	Fall 2014
Course	GEOL 11 - #1	Fall 2014	Spring 2015	Spring 2015
Course	GEOL 11 - #2	Fall 2013	Fall 2013	Spring 2014
Course	GEOL 11 - #3	Fall 2012	Fall 2012	Spring 2013
Course	GEOL 11 - #4	Fall 2014	Fall 2014	N/A
Course	GEOL 11 - #5	Fall 2014	Fall 2014	Fall 2015
Course	GEOL 7 - #1	Summer 2014	Summer 2014	Summer 2015
Course	GEOL 20	N/A	N/A	N/A
Course	METRO 10 - #1	Fall 2014	Fall 2014	N/A

Type	Name	Student Assessment Implemented	Assessment Results Analyzed	Change Implemented
Course	METRO 10 - #3	Fall 2014	Fall 2014	N/A
Course	METRO 10 - #4	Spring 2014	Spring 2014	Fall 2014
Course	METRO 10 - #5	Fall 2015	Spring 2016	N/A
Course	METRO 10L	N/A	N/A	N/A
Course	PHYS 21 - #1	Spring 2015	Spring 2015	Spring 2016
Course	PHYS 21 - #4	Spring 2015	Spring 2015	Spring 2016
Certificate/Major	Environmental Studies	Fall 2014	Fall 2014	Fall 2015
Certificate/Major	Natural Sciences	Fall 2014	Fall 2014	Fall 2015

#### 4.2a Key Courses or Services that address Institutional Outcomes

Course/Service	1a	1b	1c	2a	2b	2c	2d	3a	3b	4a	4b	5	6a	6b	6c	7
ASTRON 12	X	X	X				X	X		X	X			X		
ASTRON 3			X				X	X		X	X					
ASTRON 3L	X	X	X				X	X		X	X			X		
ASTRON 4			X				X	X		X	X					
ASTRON 4L	X	X	X				X	X		X	X			X		
ENVS 12			X	X			X	X		X	X	X	X	X		X
ENVS 8			X	X			X	X		X	X	X	X	X		X
ENVST 40			X	X	X		X	X		X		X	X			X
ENVT STUDIES MAJOR			X	X			X	X		X	X	X	X	X	X	X
ERTHS 85.1			X	X			X	X	X	X		X		X	X	X
ERTHS 85.2			X	X			X	X	X	X		X		X		X
GEOG 3			X	X			X	X		X			X		X	
GEOG 4			X				X	X		X	X					
GEOG 7			X	X			X	X		X	X		X		X	
GEOL 1			X				X	X		X	X					
GEOL 11			X				X	X		X	X					
GEOL 1L	X		X				X	X		X	X			X		
GEOL 20	X		X				X	X		X	X	X				
GEOL 7			X				X	X		X		X		X		X
METRO 10			X				X	X		X	X					
METRO 10L		X	X				X	X		X	X			X		
PHYSC 21	X		X				X	X		X	X			X		

## 4.2b Narrative (Optional)

Updated Spring 2022

We have discussed our SLO assessment plan and how our course SLOs align with institutional SLOs at multiple department meetings and at preparation of this PRPP cycle. This has led to rich conversations about improving our teaching.

## 5.0 Performance Measures

### Reviewed Spring 2022

Not Applicable - no non-academic data elements.

## 5.1 Effective Class Schedule: Course Offerings, Times, Locations, and Delivery Modes (annual)

### Updated Spring 2022

- Is the program offering a **balanced** class schedule convenient to students with day, evening, Friday, and weekend courses, as needed? Explain.

Coming out of COVID, few sections are currently being offered on campus. Our on campus presence will increase in Fall 2022, and again in Spring 2023. In person, we offer as diverse a schedule as possible at this time, with day and evening sections available. We are incorporating many online and hybrid sections into the schedule in hopes to cater to more students wishing to come to campus fewer times per week. In the future we could offer some Saturday/weekend classes if we had more staffing.

Additionally, we offer courses that are full-semester length, and others that are short format, 15 weeks, to accommodate students with varying time constraints and availability.

- Is the program offering a good **geographic distribution** of classes, at Santa Rosa, Petaluma, Public Safety Training Center, and other sites? Explain.

Yes, pre-COVID, nearly 30% of students in the duplicated headcount measure were at Petaluma, while the rest were at Santa Rosa. Our department typically offers a robust schedule on the Petaluma campus. We have very few offerings on the Petaluma Campus during summer school because the demand is much stronger in Santa Rosa.

- Does the program effectively use **alternative delivery modes** when appropriate such as online, online hybrid, or video transmission? Explain.

All courses are currently offered entirely online (synchronous or asynchronous) or in hybrid format. In the future, more sections will be returning to campus, but most will still offer some online content, to be considered hybrid or blended. Some sections will be entirely face-to-face.

- Is there demand for specific courses that is not being met? If so, what is the plan to address this?

Yes, there is demand for ENV5 8 (global climate change). We can consider offering and additional section.

- Could the program do a better job of serving students, and if so, how? State specific recommendations.

We need to discuss whether we can offer an appropriate online lab option. There is demand for online science labs, but we are not sure if these can be achieved in a pedagogically appropriate way.

- If the program/unit has a pattern or trend of declining or unstable enrollments over the past four years, what adjustment of course scheduling has the program implemented to address this? (For example, changing times of day, block scheduling, online offerings, short courses, adjusting frequency and number of sections, open entry-open exit classes, or rotation plans.)

We've seen softening enrollment in every class due to the COVID pandemic. We have offered flexible online options throughout the pandemic, and have still seen enrollment declines.

- Are course offerings being scheduled frequently enough or in rotation to assure that students can complete the program within the stated duration of the program or within a "reasonable" time frame (often interpreted to be two years, but it could be longer)?

Yes. The only degree we currently offer is the Environmental Studies interdisciplinary major. Unfortunately many of the electives in this major are controlled by other departments and are not offered very frequently or at enough times. However, we have been able to provide suitable course substitution offerings to students so that they are able to complete their degrees quickly.

- Describe any marketing efforts or outreach activities geared to increasing enrollments, if applicable.

We used to have the Planetarium, which was instrumental in generating enthusiasm and excitement within our department. However the college has cut all of its funding.

## 5.2a Enrollment Efficiency

Updated Spring 2019



Our overall enrollment efficiency has ranged from 93.1%-97.3% during the past four years of spring/fall. Our summer efficiency is somewhat lower, ranging from 82.4% - 90.3%. However, these summer figures are not too concerning because they mostly reflect extra seats available in extended lecture courses which are still more financially sustainable than smaller classes even with lower efficiency numbers.

Our enrollment efficiency within particular disciplines has dropped below 85% a few times. Various Earth Science classes (e.g. meteorology, geology, geography) have occasionally been inefficient, and Geography in particular has struggled on the Petaluma Campus.

We believe that we have largely addressed many of the inefficiency issues by cutting sections and moving to a rotation on a few classes. Starting spring 2018, geology's efficiency has improved markedly, ranging from 88.2-98.8% during the past year. Meteorology's efficiency rose to 106.7% last semester, and geography has remained over 85% during the past year as well.

Many courses could benefit from being delivered in the hybrid or fully online formats. We are in the process of preparing many of our lower-efficiency courses for delivery online.

Astronomy and Environmental Science both have efficiencies that are very near 100%.

Astronomy is impacted by a lack of instructors. However we do not have any hope of being awarded a new full time faculty member in this budget climate.

Environmental Science is more efficient and higher demand than some of our other areas, but we believe that sacrificing other areas to increase our number of Astronomy and Environmental Science sections would be short-sighted and would deprive students of opportunities to meet their educational goals. We are hoping to relieve some demand for Environmental Science courses by offering our other lower-enrolled courses in online or hybrid delivery formats. This would enable us to maintain a wide variety of offerings for students.

Our courses are not impacted by a lack of space.

## 5.2b Average Class Size

### Updated Spring 2022

- Explain any trends in average class size, whether increasing or decreasing.

Our class sizes vary considerable by discipline and by class type (lecture vs. lab vs. field class). When taking this into account, the class sizes among similar types of classes in a discipline have remained fairly constant.

- Explain any limits on class size, such as pedagogical limits, regulatory mandates, or facilities constraints.

Our two main Earth Science classrooms on the Santa Rosa campus are fairly small. Room 2042 can only seat 25 students, while room 2049 can seat 30. Our main classroom on the Petaluma campus can seat 30-40 students depending on the furniture configuration. It is hard to seat more than 30 comfortably for an interactive class. Our field classes are limited by safety concerns. We only feel it is safe to be out in the field with 20 students per instructor. We offer some double sections with 2 instructors for 40 students. Some of our astronomy classes are offered in extended lecture format with class sizes from 90 up to 198.

## 5.3 Instructional Productivity

### Updated Spring 2022

- If your program's productivity ratio is **17.5 or higher**, describe how you maintain that productivity.

Astronomy has high productivity, staying above 20 consistently during the past four spring/fall semesters, with somewhat lower numbers during the summer. This productivity is maintained by offering a several extended lecture courses with class limits of 198 and 90.

- If your program's productivity ratio is **lower than 17.5**, explain any circumstances that contribute, such as limitations of facilities, regulations, special pedagogy, or scheduling challenges.

The other disciplines are all under 17.5. There are two main factors limiting the productivity. First, we offer many lab science classes. For pedagogical reasons, labs need to have small class sizes because instructors give one-on-one feedback and attention during class as well as supervising the hands-on use of equipment. Second, our lecture classrooms are fairly small as mentioned in section 5.2b.

- Explain any trends that you see in productivity.

Productivity has remained fairly stable. We have cut sections when enrollments were low to boost productivity over the past years. Thus our productivity numbers have not changed much despite declining enrollment.

- Recommend ways the program could improve productivity.

By continuing to offer some hybrid/online sections we hope to boost enrollment and thus productivity in a few courses. If the college tied load and pay in extended lecture to the exact number of students at census (rather than tying it to tiered thresholds) then more instructors would be incentivized to work in extended lecture format, boosting productivity greatly. I believe this is an important step the district could take that would have positive implications for productivity district-wide.

## 5.4 Curriculum Currency

### Updated Spring 2022

As of May 2022, all ESS curriculum is up-to-date. We keep track of courses and update as they come up for six-year review.

## 5.5 Successful Program Completion

### Updated Spring 2022

The Environmental Studies major is an interdisciplinary major. Several of the core courses for this major are housed within our department.

- Describe any course sequencing or course rotation plans that allow a student to complete their certificate/degree/major in a reasonable time frame.

The required course ENVST 40 - Environmental Forum is offered every spring semester. Students can complete the required 1 unit of work experience or community engagement on a flexible schedule.

An additional 12 units must be completed from a set of 7 core courses. Among these, we only have control over one course: ENVS 12 - Introduction to Environmental Science. This class is offered every semester in multiple time slots and locations, including evening and Petaluma campus sections, now online and hybrid as well.

To help improve the situation, our department will be adding ENVS 8 - Global Climate Change to the core requirements.

- Does the program offer support or services to help students complete certificates, licensure, or majors? If so, describe those.

We are very flexible in arranging course substitutions and independent studies to help students complete the major if they are having trouble making the core courses fit into their schedules. Individual instructors help students to find suitable community involvement / work experience placement, including working in the Petaluma Campus Garden.

- Review the trends in numbers of degrees or certificates awarded, and, if possible, explain the trend. Data are posted on the PRPP web site: [www.santarosa.edu/prpp](http://www.santarosa.edu/prpp).

The last information we can find relates to 2014-2015, at which point the number of students who completed this major jumped to 10. In subsequent years it was 11, 7, and 7. Without current data, there is not enough data to establish a significant trend, but it seems to be holding steady in the high single digits.

- If available and applicable, provide data about student success rates on licensure exams or external/industry examinations or certifications. (Note: you can copy and paste that information into this text block.) If applicable, recommend ways to improve certificate, licensure and major completion overall and by targeted groups, as appropriate. "Targeted groups" could be defined by gender, age, ethnicity, disability status and income.

Not applicable.

- If these data are available, what has been the history of employment or job placement following the certificate or majors in your program/unit? What is the employment outlook over the next three years? If applicable, recommend ways to improve employment or job placement.

Data not available.

## 5.6 Student Success

### Updated Spring 2022

How does student retention at the discipline level compare to the overall District **retention** rate?

	Retention %	
	S 2021	F 2021
ASTRON	80.3	81.8
ERTHS	100	
ENVS	80.4	70.9
GEOG	80.1	76.4
GEOL	77.5	74.3
METRO	93.3	81.3
PHYSC		

For the department: 80.1 Spring, 78.8 Fall

For the district: 79.3 Spring, 76.2 Fall

Our department retention rates are above the district retention rates.

How does student success at the discipline level compare to the overall District **success** rate?

	Success %	
	S 2021	F 2021
ASTRON	75.8	78.2
ERTHS	100	
ENVS	79.9	68.9
GEOG	74.9	73.1
GEOL	73.8	70.9
METRO	93.3	81.3
PHYSC		

For the department: 76.4 Spring, 75.6 Fall

For the district: 76.4 Spring, 73.0 Fall

Our department success rates are in line with the district averages.

How does the average student GPA at the discipline level (total units/grade points) compare to the overall District GPA? If there is a difference (either above or below), can you explain that?

	GPA	
	S 2021	F 2021
ASTRON	2.66	2.78
ERTHS	4.00	
ENVS	2.97	2.81
GEOG	2.81	2.75
GEOL	2.60	2.50
METRO	3.28	2.97
PHYSC		

For the department: 2.74 Spring, 2.75 Fall

For the district: 2.96 Spring, 2.82 Fall

The GPA of our students has, by and large, been lower than the district average. It is our opinion that students taking ESS classes are underprepared for college-level science courses when compared to other disciplines within the district. We also maintain rigorous academic standards.

## 5.7 Student Access

### Updated Spring 2022

Do students from diverse ethnic backgrounds enroll in the disciplines at rates equal to their participation rates in the District as a whole?

We are unable to answer this question as we cannot find the district totals with which to compare departmental data.

Do male or female students constitute 75% or more in this discipline? If so, what strategies are being used or planned to increase enrollment of the non-traditional gender?

No – none of the ESS disciplines have male or female students accounting for more than 75%. The numbers vary significantly by discipline and by year. There have been some recent trends, however.

Has the program/unit experienced changes to its student population or changes in the needs of students in the last four years?

Our students have followed district-wide trends, with an increased proportion of under-prepared students.

What types of outreach or retention efforts are occurring or should be implemented to better serve underserved or under-represented populations in this program?

To date, no efforts have been made to increase the enrollment of under-represented populations. These populations have historically been under-represented in science disciplines

in other academic settings as well as the professional realm. These discussions are occurring at the state and national level within professional organizations.

How does this program/unit serve students that are often underrepresented in college including various ethnic groups, lower socioeconomic groups, English language learners?

Multiple faculty have undergone training in reading apprenticeship to better serve students with poor academic English reading skills. Faculty have attended affective learning workshops as well. Multiple instructors use Open Educational Resources (OER) to better serve and provide access to economically disadvantaged students.

## 5.8 Curriculum Offered Within Reasonable Time Frame

**Updated Spring 2022**

Please refer to section 5.5

## 5.9a Curriculum Responsiveness

**Updated Spring 2022**

How does the program/unit curriculum respond to changing student, community, and employer needs?

We attempt to offer a variety of courses in multiple formats (online, hybrid, F2F) that students can take to meet their GE requirements that include lecture and lab components.

Has your program/unit fully complied with the State requirement that every general education course that transfers to a CSU or UC campus must include objectives (content) related to gender, global perspectives, and American cultural diversity? If not, describe the plan to bring the curriculum into compliance.

During regular curriculum review, our courses have successfully gone through Cluster Tech Review and CRC without issue.

How does the curriculum support the needs of other programs, certificates, or majors?

Several of our courses are included as parts of other majors, or electives for certificates. Specifically many of our courses are included in the Environmental Studies major and the Natural Sciences major. Our primary focus is on helping students to complete their GE science requirements, including laboratory science.

Offer recommendations and describe plans for new directions in the curriculum.

We have been offering a new Global Climate Change course since Fall 2019. We are exploring offering Oceanography and possibly Astrobiology in the future.

## **5.9b Alignment with High Schools (Tech-Prep ONLY)**

**Updated Spring 2022**

Not applicable.

## **5.10 Alignment with Transfer Institutions (Transfer Majors ONLY)**

**Updated Spring 2022**

- Do transfer majors align with (75% overlap of units) the lower division required courses at common transfer destinations? If not, what is the plan to bring the major into alignment?
- Do transfer majors align with (50% overlap with) the lower division required courses at common transfer destinations? If not, what is the plan to bring the major into alignment?

We are working on the creation of Associate Degrees for Transfer (AA-T) for geography and environmental science. Once completed, there should be a 75% overlap of units.

## **5.11a Labor Market Demand (Occupational Programs ONLY)**

**Updated Spring 2022**

Not applicable.

## **5.11b Academic Standards**

**Updated Spring 2022**

Does the program regularly engage in dialogue about academic standards? If so, describe any conclusions or plans.

Within our individual disciplines, there is dialogue between instructors regarding academic standards, grading, assignments, etc. We are fortunate that instructors agree on academic rigor, and course standards. We are concerned about challenges we will face as more underprepared students might enter our courses since our advisories have been removed, and in response to the changes to K-12 education due to COVID. We plan to monitor the situation and adjust as necessary in the coming year.



## 6.1 Progress and Accomplishments Since Last Program/Unit Review

Rank	Location	SP	M	Goal	Objective	Time Frame	Progress to Date
0001	ALL	02	01	Geography TMC major	Create major that aligns with CSU/UC.	2021-2024	Major was submitted to State for approval; GIS course outline is not yet approved through C-ID. Either work with EA&T to update the course outline or change the course requirements for the major and resubmit paperwork for approval.
0002	ALL	02	01	ENVS TMC major	Create major that aligns with CSU/UC.	2021-2024	Major is stalled at the State level awaiting C-ID approval of core course. Department faculty are serving on the ENVST TMC working group and C-ID course review with the State and are working to address this.
0003	ALL	02	06	Develop lab components for GEOG 4	Move course through Curriculum process at SRJC to offer starting in Fall 2023	2021-2022	Completed paperwork and approved at STEM Cluster Tech (2/22). Awaiting CRC approval, not yet put on CRC agenda. Following up with Curriculum office (5/22).
0004	ALL	02	01	Explore additional ESS course offerings to meet student needs (astrobiology, oceanography)	Develop format, SLO's and COR for new courses.	2021-2024	Astronomy instructor is working with NCCN (Nasa Community College Network) to be paired with a NASA astrobiology expert for consultation on curriculum development.

## 6.2b PRPP Editor Feedback - Optional

### Updated Spring 2022

We find this process extremely time consuming and redundant, as many sections ask for repeated information. In instances such as this, why can't the section be self-populated by what's been added to the duplicate/like section?

Additionally, the data the district provides us with is incomplete and limited. We feel that the data supplied from the district should **auto-populate** in the relevant section of this PRPP, so that our job should be *data analysis and program review* rather than wasting our valuable time crunching numbers that should be generated and already present in our PRPP.

## 6.3a Annual Unit Plan

Rank	Location	SP	M	Goal	Objective	Time Frame	Resources Required
0000	ALL	02	01	Update ENVST major	Remove outdated courses (ENGL 10 and CI53) and add in new core course (ENVS 8). Streamline electives. Create and disseminate survey and address comments from the Program Review Committee.	2022-2023	Staff time.
0001	ALL	02	01	Geography TMC major	Two options: Work with EA&T to update GIS course to align with C-ID or remove GIS from the major and resubmit Geography TMC based on comments from the State.	2022-2023	Staff time.
0002	ALL	02	01	ENVS TMC major	Continue to work with C-ID to move forward with approval of core ENVS classes and major. Continue to serve on ENVS TMC major review committee at the state level. Once issues are resolved with C-ID, follow up with Articulation to resubmit the major.	2022-2024	Staff time.
0003	ALL	02	06	Finalize GEOG 4 Lab course.	Follow up with Curriculum for status of course (5/22). Order equipment / supplies for lab.	2022-2023	Staff time. Supplies and Equipment for labs (~\$5,000).
0004	ALL	02	01	Explore additional ESS course offerings to meet student needs (astrobiology, oceanography)	Develop format, SLO's and COR for new courses.	2022-2024	Staff time. Lab equipment supplies.