

### **AC-1 Academic Courses:**

- The total number of sustainable courses offered **undergraduate** - 3446, **graduate** - 144.
- The number of sustainability-focused courses offered **undergraduate** - 76, **graduate** - 0.
- The number of sustainability-inclusive courses offered **undergraduate** - 97, **graduate** - 8.
- The percentage of academic departments offering sustainability courses is 43.3 %.

### **AC-2 Learning Outcomes:**

- Of the total number of graduates from the degree program (2341), only 1709 number of graduates from the degree program understand the concept of sustainability, which is around 73%.
- Major degree programs that help in understanding the concepts of sustainability are GEP (Geography, Environment, and Planning), WGS (Women's and Gender Studies), and Philosophy department.

### **AC-5 Immersive Experience:**

- The University has JUMP (Join Us in Making Progress), a community service program of Associated Students which is sustainability focused. It provides an opportunity for students for personal growth, leadership, and education through service to the campus and community.

### **AC-6 Sustainability Literacy Assessment:**

- Only a subset of students, during the start of the term, are introduced to the sustainability assessment tool to provide their post-project experiences they gain from working on environmental issues.

### **AC-8 Campus as a Living Laboratory:**

- The university utilizes its infrastructure and operations as a living laboratory for applied student learning for sustainability. Some of the projects worked on by the students include:

**Campus Engagement:** As a part of the class project, a group of three students worked on "Saving Water & Money by Xeriscaping" the university. Through this project, the students were able to research and identify the annual water consumption and costs involved in maintaining the traditional lawns and were able to present the class with some possible solutions of replacing the campus lawns with Xeriscape gardening.

**Air & Climate:** As part of the study program, one of the students of Prof. Jeff Baldwin worked on their thesis topic "Anthropological and Environmental factors impacting Climate Change mitigation through Carbon Sequestration: An Evaluation of Elevation, Vegetation, Fire, and Land use,". This paper explores the environmental factors that affect soil organic carbon stocks (SOCS), namely land use, elevation, vegetation, and fire. Soil Organic Carbon (SOC) is an extremely important component of soil and ecosystem health, as it is the largest terrestrial carbon sink in the world. By taking samples from grasslands, woodlands, and wetlands of five different elevations, the student was able to better understand environmental factors that determine the SOCS. The locations selected for the samples are Sonoma State University (SSU), Crane Creek Regional Park (CCRP), Coyote Farm (CF), and Fairfield Osborn preserve (FOP).

**Buildings:** During Fall 2019, as part of the class project, students from the course Energy, Technology and Society have compiled baseline carbon data as a preliminary step towards a larger Climate Action Plan. They have analyzed the usage of the building's natural gas (Scope 1) and electricity (Scope 2) from the years 2014 to 2017 to calculate their carbon emissions.

**Energy:** For a class project, the students had the opportunity to look into the prospects of increasing renewable solar energy sources at Sonoma State University. They have conducted a comparison of the amount of current rooftop solar vs the potential amount of rooftop solar and what would the cost of these technologies be. A cost analysis of Solar Roadway and Solar Rooftop on the university was also conducted to project the development of solar use.

**Food & Dining:** Most dining services are run by students under the supervision of staff which provides them with different skills as well as exposure to food sustainability issues. A Student Sustainability Co-Ordinator coordinates and organizes the Farm to Table Dinner Farm information with marketing for our students. They set

up monthly tracking for every year and are currently working on templates to track our Carbon footprint in the future. Students working in dining services are also responsible for composting waste food.

**Grounds:** Students have been sampling soil deposits on campus, at Fairfield Osborn Preserve, and Crane Creek to determine the amount of carbon sequestered in them. Students collect and process samples for Total Organic Carbon (TOC). This analysis is providing a baseline for understanding the natural storage of carbon on campus. We have collected sediment cores from wetlands at Fairfield Osborn Preserve. We have dated the deposits using Pb210 analysis. These samples thus provide us with a historical perspective on carbon sequestration. We have found that different types of wetlands store more carbon than soils in grassland and forested environments. This is useful as we can use this information to manage existing natural habitat and also man-made environments to maximize carbon storage.

**Transportation:** A group of four students from the GEP 373 class had the opportunity to research Transportation. Their research looks into the question of how many gallons of gasoline are avoided for every dollar the university invests in on-campus housing. They conducted a student and vehicle surveys to determine the average driving distance, vehicle gas mileage and also interviewed the Sonoma State housing coordinator to determine the construction and maintenance costs of student housing. The results indicate that the University could potentially avoid an enormous amount of carbon dioxide from entering the atmosphere by reducing transportation to campus by building more on-campus housing.

**Waste:** There is an increasing amount of paper wastage by generating bills and receipts. Students had the opportunity to conduct a data-based analysis of the problem using the root cause analysis for the project "Paper Receipt Waste in California". The project used available data from the state to calculate a per capita generation rate. It then identified the negative environmental impacts including waste generation (the receipts are generally too small for recycling), potential litter, and human exposure to BPA. The evaluation process seeks to identify which policy instrument could eliminate or reduce the generation of paper receipts by evaluation cost, unintended consequences, privacy concerns (paper v. email receipt) feasibility, and reduction in risk to human health. The student found that the best policy approach would be to provide paper receipts only upon request.

**Water:** A team of students researched on the topic, "Can rooftop rainwater harvesting be a potentially viable method for a successful drip irrigation system in Sonoma County?". The research included examining the benefits and viability of the planned implementation of rainwater collection for irrigation at the Environmental Technology Center (ETC) on Sonoma State's campus. Using historical climate data and the actual irrigation needs of the current garden, an estimated realistic total of expected gallons of collected water has been acquired. In addition to this, the estimated minimum expected collected amount of water per square foot of rooftop has been extrapolated into residential rooftop collection settings. The total water collection effectiveness from different standard-sized residential roofs was then applied to maximum areas of lawn able to maintain, or other common garden options used in California, such as drought-tolerant natives.

**Diversity & Affordability:** Prof Elisa from the Psychology department along with her students worked on a thesis project " Why do Racial Microaggressions matter for racial minority Students' Academic Success?" which identifies and addresses the racial microaggressions experienced in the classroom and their impact on the academic success and psychological well-being of Black/African American college students. By conducting a survey of staff, professors and student clubs, they have provided some recommendations to enhance the classroom experience and promote students' academic and personal success.

#### **OP-1 Emissions Inventory & Disclosure:**

- Total gross Scope 1 GHG emissions for the performance year (2018-2019) is **5606.01** Metric Tons of CO2 Equivalent (Stationary Combustion - 5459.63; other sources - 146.38).
- Total gross Scope 2 GHG emissions (Imported Electricity) for the performance year (2018-2019) is **5306.98** Metric Tons of CO2 Equivalent

**OP-2 Greenhouse Gas Emissions:**

- Adjusted net Scope 1 and Scope 2 GHG emissions in the **baseline year** (2017-2018):**13207.82** MTCO2 equivalent and **performance year** (2018-2019):**10912.99** MTCO2 equivalent.
- Adjusted net Scope 1 and Scope 2 GHG emissions per weighted campus user in the **baseline year**:**1.70** MTCO2 equivalent and **performance year**:**1.33** MTCO2 equivalent.

**OP-3 Building Design and Construction:**

- Only **52737** square feet of building space is designed and built in accordance with multi-attribute green building code, policy, guideline or rating system, but not certified/verified during the academic years of 2017 to 2019.

**OP-6 Clean and Renewable Energy:**

- The total site energy consumption is **171521.47** MMBTU.
- The total clean and renewable energy generated is **19913.482** MMBTU.
- The percentage of total energy consumption from clean and renewable sources is **11.6%**.

**OP-7 Food and Beverage Purchasing:**

- The percentage of total annual food and beverage expenditures on products that are sustainably or ethically produced is **8.13%**.
- The percentage of total annual food and beverage expenditures on plant-based foods is **5.4%**.

**OP-9 Landscape Management:**

- Area managed organically, without the use of inorganic fertilizers and chemical pesticides, fungicides, and herbicides are **0.66** acres.
- The area managed in accordance with an Integrated Pest Management (IPM) program that uses selected chemicals only when needed is **4.9** acres.
- Area managed using conventional, chemical-based landscape management practices is **263.44** acres.
- The percentage of grounds managed organically is **0.24 %**.
- The percentage of grounds managed in accordance with an IPM program is **1.82%**.

**OP-13 Cleaning and Janitorial Purchasing:**

- The percentage of expenditures on cleaning and janitorial products that are third-party certified to meet recognized sustainability standards is **79.38%**.

**OP-14 Office Paper Purchasing:**

- The total annual expenditures on office paper are **101628.76** US\$.
- Expenditures on office paper with the following levels of post-consumer recycled, agricultural residue, and/or FSC certified content:

10-29 percent	7444.52 US\$
30-49 percent	30808.54 US\$
90-100 percent	4835.51 US\$

**OP-16 Commute Modal Split:**

- The total percentage of students that use more sustainable commuting options as their primary mode of transportation is **37.6%**.
- The total percentage of employees that use more sustainable commuting options as their primary mode of transportation is **2.6%**.

**OP-18 Waste Minimization and Diversion:**



**Figures needed to determine total waste generated (and diverted) ②**

	Performance Year	Baseline Year
Materials recycled	* <input type="text" value="289.49"/> Tons	* <input type="text" value="292.5"/> Tons
Materials composted	* <input type="text" value="324.0"/> Tons	* <input type="text" value="246.0"/> Tons
Materials donated or re-sold	* <input type="text" value="0.8"/> Tons	* <input type="text" value="1.78"/> Tons
Materials disposed through post-recycling residual conversion	* <input type="text" value="5.1"/> Tons ③	* <input type="text" value="4.93"/> Tons
Materials disposed in a solid waste landfill or incinerator	* <input type="text" value="557.42"/> Tons	* <input type="text" value="555.64"/> Tons
<b>Total waste generated</b>	<input type="text" value="1176.81"/> Tons	<input type="text" value="1100.85"/> Tons

- Percentage of materials diverted from the landfill or incinerator by recycling, composting, donating or re-selling, performance year is **52.19%**.
- Percentage of materials diverted from the landfill or incinerator (including up to 10 percent attributable to post-recycling residual conversion) is **52.63%**.

## OP-21 Water Use:

### Potable water use per weighted campus user

	Performance Year	Baseline Year
Potable water use per weighted campus user	8197.03329447	8464.30410879
	Gallons	Gallons

### Percentage reduction in potable water use per weighted campus user from baseline <sup>?</sup>

3.15762301163

### Total water withdrawal per unit of vegetated grounds

	Performance Year	Baseline Year
Total water withdrawal per unit of vegetated grounds	4326956.6	4575321.6
	Gallons / Acre	Gallons / Acre

### Percentage reduction in total water withdrawal per unit of vegetated grounds from baseline <sup>?</sup>

5.42836158228

### Potable water use per unit of floor area

	Performance Year	Baseline Year
Potable water use per unit of floor area	27.5173220786	26.9947362842
	Gallons / GSF	Gallons / GSF

### Percentage reduction in potable water use per unit of floor area from baseline <sup>?</sup>

0.0