



2018-2019 Program Review Report

Division/Area Name: Biological and Environmental Science / Agriculture: Park and Landscape Management	For Years: 2020-2021
Name of person leading this review:	Neal Weisenberger
Names of all participants in this review:	Neal Weisenberger, Sharon Weisenberger, Kris Chassion

Part 1. Program Overview:

<i>1.1. Briefly describe how the program contributes to the district <u>mission</u>:</i>	
The program offers vocational certificates, Associate Degrees and/or educational curriculum, which provide qualified, entry level and advanced placement individuals for business and industry. Students can also transfer to Universities to complete Bachelors, Masters or Doctorates in Agriculture and related fields.	
<i>1.2. State briefly program highlights and accomplishments:</i>	
The nature of the program is to help train the future workforce. We currently have graduates of the program working in or at: Seattle Mariners Stadium, City of Lancaster, City of Palmdale, City of Santa Clarita, County of Los Angeles, State of California, Antelope Valley College, Lowes, Home Depot, Local Nurseries and landscape suppliers as well as employees of various other public and private business. We also have graduates that have started their own gardening business, took and passed their landscape contractor's license, and became landscape designers. Being a major that is found at 4-year schools, we have students that transfer to 4-year college and universities and became Agriculture Teachers, Landscape Architects, Greenhouse Managers, and Soil Scientists.	
<i>1.3. Check each <u>Institutional Learning Outcome (ILO)</u> supported by the program.</i>	
X Communication	X Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis. X Demonstrates listening and speaking skills that result in focused and coherent communications.
X Creative, Critical, and Analytical Thinking	X Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills. X Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.
X Community/Global Consciousness	X Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment. X Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.
X Career and Specialized Knowledge	X Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.

1.4. Check each <u>Educational Master Plan (EMP)/Strategic Plan Goal</u> supported by the program.	
X	Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.
X	Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.
X	Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.
<input type="checkbox"/>	Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.
X	Goal 5: Align instructional programs to the skills identified by the labor market.

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

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Part 2.B. Analyze the program review data (please see the program review data retrieval instructions and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	<ul style="list-style-type: none"> ☐ The hands-on nature of the program gives the students the needed skills to join the workforce, whether it is as an employee or a small business owner. ☐ Classes receiving hands-on training doing actual landscape projects in commercial and residential settings. <ul style="list-style-type: none"> ● The program’s strong link to the community, county, and State Landscape industry. ● The program’s strong community involvement. ☐ The student retention and success rate exceed the college rate in all but two of the eight samples, and was just below the school average in those two.
Weaknesses	<ul style="list-style-type: none"> ● Keeping the curriculum up-to-date with college’s curriculum requirements. ● Although it is well known and publicized in the community, more information always helps. ● Staffing of the facilities on a short-term situation such as when Lab technician is on vacation, injured or sick. ● The program is lacking in tools and equipment to efficiently operate the program, and rising up to industry standards in modern tools and equipment. ● Use of the Agriculture/Landscape Advisory Committee more efficiently. ● Working with Maintenance/Grounds for coordinating supplies, equipment and safety training. ● Statistically our weakness is retention and success of African American students. This would be a non-traditional field of study or occupation for African American students. Our enrollment for this group of students is very low, which can affect results
Opportunities	<ul style="list-style-type: none"> ● With changing requirements regarding water use in residential, commercial and agriculture use. The program and college could aid the research and train students for these emerging careers.

	<ul style="list-style-type: none"> With existing class between agriculture, biology, anthropology and other discipline develop programs for environmental curriculum (e.g. Environmental impact reports, mitigation and restoration) and training students for these emerging careers.
Threats	<p>With the current political direction at the state level, it seems that we are moving away from being a community college and becoming a Junior College. The State seems more concerned with moving students through programs quickly and onto 4-year colleges and universities. Vocational or CTE classes and programs may not fit, this current view by the state. The program has more part time students, taking one or two classes that fit into their schedule providing the education necessary to improve their current job, or to find a new career.</p> <p>The program not having a full-time faculty member to oversee the program. Many classroom curriculum projects bridge classes from semester to semester or from class to class. The lack of coordination will be very difficult for the program to overcome.</p>

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

Slo's and Plo's over the past years have meet or exceeded their goals. As for the action plans, many of the action plans have not been complete due to lack of funding or they are ongoing plans. We will always continue to strive to improve classroom learning, which includes hands-on training in labs. Most of the action plans that require funding are mirrored the program review goals.

Part 2.D. Review and comment on progress towards past program review goals:

Most of the program review goals have not been complete due to lack of funding or they are ongoing plans. We will always continue to strive to improve classroom learning, which includes hands-on training in labs.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

Program/Area Goal #	Goal supports which ILO/PLO/SLO/OO?	Description of Goal	Steps to be taken to achieve goal?
Maintain a clean, safe and functional learning and work environment	<p>Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.</p> <p>Goal 5: Align instructional programs to the skills identified by the labor market.</p>		<p>Action #1. Build tool Racks to safely store tools.</p> <p>Action #2. Develop a plan and implement the plan to increase staffing on a part-time/hourly basis to support the program.</p> <p>This is an ongoing goal of health and safety. Organization of</p>

	Indirectly and Directly apply to all PLO,s and SLO,s		<p>materials used in classes has been slow since moving into new facilities in which some storage issues have never been finished.</p> <p>Repairing and replacing equipment and facilities with safety issues has been an uphill battle within the program.</p>
Design and Landscape Facilities	<p>Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.</p> <p>Goal 5: Align instructional programs to the skills identified by the labor market.</p> <p>PLO's / SLO's</p> <p>Indirectly and Directly apply to all PLO,s and SLO,s</p>	<p>It has always been part of the curriculum to install and maintain landscapes. Even as landscapes age they will need to continue to be redesigned at the current industry standards. The challenge has always been the ability to offer classes in a timely manner.</p> <p>Most of the classes are offered on a two-year rotation, which means if a project is partially completed it may take another 2 years to complete. If completed by personnel other than the students, the students lose the opportunity to learn the job skills needed in the industry.</p>	<p>Action #2. Develop a plan and implement the plan to increase staffing on a part-time/hourly basis to support the program. (also in goal 1)</p> <p>The action items that require funding is primarily decrease the time between some of the classes being offered. E.g. once every 3 semesters instead of 4.</p>
Develop a plan to maintain facilities	<p>Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.</p>	<p>Most of the classes are offered on a two-year rotation, which means if a project is partially completed it may take another 2 years to complete. If completed by</p>	

	<p>Goal 5: Align instructional programs to the skills identified by the labor market.</p> <p>Indirectly and Directly apply to all PLO,s and SLO,s</p>	<p>personnel other than the students, the students lose the opportunity to learn the job skills needed in the industry.</p>	
<p>Improve the rate and speed of students completing the program(s)</p>	<p>Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.</p> <p>Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services</p> <p>Goal 5: Align instructional programs to the skills identified by the labor market.</p>	<p>Most of the classes are offered on a two-year rotation, which means if a project is partially completed it may take another 2 years to complete.</p>	<p>Replace Full time faculty</p> <p>Action #1. Expand the course offerings in the Program.</p> <p>Step 1 – Determine which classes should be increased in offering</p> <p>Step 2 – Determine the frequency the classes.</p> <p>Step 3 – Develop if a day-time classes are needed.</p> <p>Step 4 – Add determined sections to the schedule</p> <p>The action items that require funding is primarily decrease the time between some of the classes</p>
<p>Industry Standard tools and equipment</p>	<p>Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.</p> <p>Goal 5: Align instructional programs to the skills identified by the labor market.</p>	<p>Tools continue to break or wear out, replacement with newer modern tools that students will use when gaining employment</p>	<p>Much of this goal could be obtain using VTEA funds. However, there seems to be some communication issue in dispersing the information. Being a CTE program not in the Career Technical Education Division the information does not reach the program. It would be best if that grant opportunity would be sent</p>

	Indirectly and Directly apply to all PLO,s and SLO,s		directly to all programs qualified to apply and not to the Deans to disperse. Save a step in communication.
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Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

<i>Type of Resource Request</i>	<i>Summary of Request</i>	<i>New or Repeat Request</i>	<i>Amount of Request, \$</i>	<i>One-Time or Recurring Cost, \$</i>	<i>Contact's Name</i>
Faculty	Replacement of only full-time Faculty	NEW	100,000	Recurring	
Classified Staff	Additional Hourly or Substitute Lab Technician when lab tech is on vacation or out for an extended time	Repeat	5,000	Recurring	
Physical/Facilities	Green House Maintenance and Repair	Repeat	2000	Recurring	
Physical/Facilities	Doors needed to be added or changed to prevent students from entering outdoor lab when staff are not present. With the addition of non-discipline classes in the facility it is impossible to prevent students from entering greenhouses and the outdoor lab. Materials have been stolen due to the building and lab area being left unlocked. When non-ag classes use the facilities, it compromises the safety and security of the learning laboratory. If a student falls or injuries	Repeat	10,000-20,000	One-time	

	themselves with no supervision in the area it could be hours before help could find them. Labs could not be complete due to complete access to the facilities.				
Physical/Facilities	Tool racks to hold tools	Repeat	2000-5000	One-time	
Physical/Facilities	Industry standard tools and equipment	Repeat	5,000 – 10,000	Recurring	
Technology	A technology budget to replace or come up to industry standards on annual basset	Repeat	5000	Recurring	
Supplies	Supplies Tools, plant material, irrigation	Repeat	2000	Recurring	
Professional Development	Development conventions, continuing education, safety training	Repeat	500	Recurring	

Please Select **Subject** area (twice) and **Program Major** or Code to get your data
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Select Subject
AGRI

Select Subject again
AGRI

and Select Major(s) for Program Awr.,
Multiple values

or Select Major Code for Awards
All

Academic Year
Multiple values



Retention, Success, Number of Sections, & Enrollment in AGRI (Total AVC rates are shown as | hover over to see data)



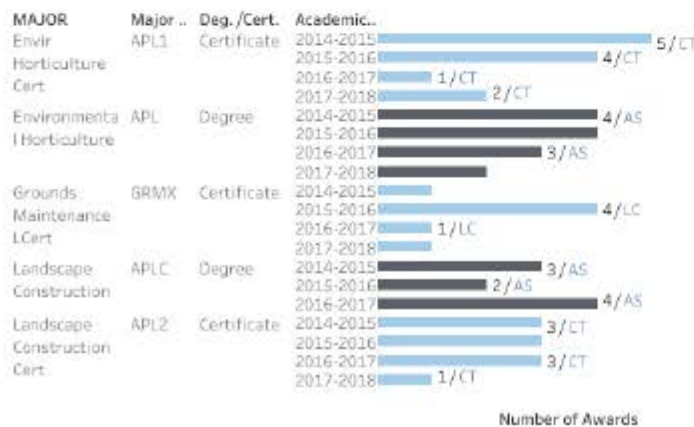
Enrollment and Number of Sections by *Modality* in AGRI

Instr. Method	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections				
Other Indep Study				1
Traditional	13	13	11	12
Enrollment				
Other Indep Study				1
Traditional	246	201	195	177

Enrollment and Number of Sections by *Location* in AGRI

Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections				
Lancaster	13	13	11	13
Enrollment				
Lancaster	246	201	195	178

Number of Degrees/Certificates Awarded in *APL, APL1, APL2 and 2 more*



FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in AGRI

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	0.7	0.3	0.7	0.5
FT/Regular	0.4	0.5	0.6	0.4
FT/Overload	0.1		0.2	0.1
TOTAL FTEF	1.2	0.8	1.4	1.0
PT/FT	1.7	0.7	1.2	1.1
FTES	14.9	10.4	13.7	10.8
FTES/FTEF Ratio	12.8	12.6	9.6	11.3
WSCH/FTEF Ratio	382.9	379.0	286.5	339.5



2018-2019 Program Review Report

Division/Area Name: Math, Science & Engineering / Biology	For Years: 2018-2019
Name of person leading this review: Zia Nisani	
Names of all participants in this review: J. Esdin, D. Feickert, B. Fredette, S. Langjahr, N. Riley, R. Miller	

Part 1. Program Overview:

<p><i>1.1. Briefly describe how the program contributes to the district <u>mission</u>: The district's mission is to provide a quality, comprehensive education to a diverse population of learners. This includes various transfer degrees and Transfer/General Education Courses. The biology program continues to meet these goals and increase course offering to facilitate transfer courses and A.S. and A.S-T in biology. Currently biology is the second largest major on campus and in the 2017-2018 cycle we had 62 (AS-BIOLOGY) & 158 (AS- LA in Math & Sciences) degrees granted.</i></p>	
<p><i>1.2. State briefly program highlights and accomplishments: (1) The number of students declaring biology as major has steadily increases and so has the number of graduates. (2) Thanks to a strong workforce grant, the Biotechnology class has been updated to contain state of the art equipment. (3) Some faculty have actively engaged in scientific research and have mentored undergraduates. This has resulted in students presenting at conferences and publishing papers in peer-reviewed journals.</i></p>	
<p><i>1.3. Check each <u>Institutional Learning Outcome (ILO)</u> supported by the program.</i></p>	
<input checked="" type="checkbox"/> Communication	<p><input checked="" type="checkbox"/> Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis.</p> <p><input checked="" type="checkbox"/> Demonstrates listening and speaking skills that result in focused and coherent communications</p>
<input checked="" type="checkbox"/> Creative, Critical, and Analytical Thinking	<p><input checked="" type="checkbox"/> Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills.</p> <p><input checked="" type="checkbox"/> Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.</p>
<input checked="" type="checkbox"/> Community/Global Consciousness	<p><input checked="" type="checkbox"/> Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment.</p> <p><input type="checkbox"/> Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.</p>
<input checked="" type="checkbox"/> Career and Specialized Knowledge	<p><input checked="" type="checkbox"/> Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.</p>

1.4. Check each Educational Master Plan (EMP)/Strategic Plan Goal supported by the program.
<input checked="" type="checkbox"/> Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.
<input type="checkbox"/> Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.
<input checked="" type="checkbox"/> Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.
<input type="checkbox"/> Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.
<input type="checkbox"/> Goal 5: Align instructional programs to the skills identified by the labor market.

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

N/A

Part 2.B. Analyze the [program review data](#) (please see the program review data retrieval instructions and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	Our success rates has increased by 2% in the last four years and is about 63%, which is below the AVC 72% success rate. However, this can be attributed to the rigor of our science courses. Our unduplicated headcount (3046) for 2017-2018 is up by 184 students from 2016-2017. This growth trend has been happening since 2014. Since 2014-2015 we have added 95 sections in Lancaster campus and 3 sections in Palmdale. That is why Biology continues to be one of the major contributors to campuses FTES and our program is continuing to grow and graduate more students.
Weaknesses	Even though our success rate is below AVCs overall rate, the growth trend matches campus's growth. We believe that we can increase our success rate by referring students to proper services when needed. The lowest success rate is among the African American population (49.6%) followed by Hispanics (59%). The White non-Hispanics and other categories have the highest success rate of 73.3% and 77.4% respectively. We clearly need to work more on meeting the needs of minority students. However, we don't believe that our success rate will never match the overall campus rate due to the nature and rigor of courses we offer. Our program is continuing to grow and the demand on offering new classes is increasing. This is especially true when it comes to Biology 110, 120, 201 and 202. In recent years we have increased the number of Biol 110 classes thanks to hiring a new fulltime faculty. The same is expected to happen with Biol 120 once we hire a new person this year. However, we do need more lab space to meet the demands on biology 201 and 202 as these courses are essential prep for nursing students and biology majors transferring to UC system. As a department we will continue our dialog on ways to improve student success rate and helping our students reach their goals.
Opportunities	In the past few years there has been number of students participating in undergraduate research that has resulted in them presenting at scientific conferences and publishing in peer review journals. As more faculty get involved in this endeavor, more

	students can benefit from this. Recently we had signed two MOUs with companies that want to pursue research in the industrial hemp area. This will be an excellent opportunity to get students involved in research. Thanks to grants (such as strong workforce) we have been able to purchase high tech scientific equipment that our majors (especially in biotechnology) can use and get hands on experience.
Threats	This biggest threat we face is lack of lab space and personal. The demand is going up but we are not able to meet it. For example, with the new lab in Palmdale center we can offer more biology classes but we don't have personal to do so. Furthermore, we already had one retirement this year and expect to have at least one more in the next two years. This will really hamper our efforts to increase our class offerings. Finally, as we are offering more majors courses (Biol 110 & 120), we are in dire need of more storage. This can be accomplished by putting more cabinets in our majors lab (UH 153).

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

Our overall success rates have been improving which might be the result of a new faculty member, new textbooks, and the other action plans instituted by the department. The transition to eLumen provides an opportunity to review our current SLOs and most likely reduce the number per class as well as focus on critical thinking rather than specific course knowledge. For example, Using the grant money we purchased skeletal specimens and slides along with Dissecting and Compound Microscopes with digital photography capabilities (and appropriate laptops) and implemented an Inquiry-based approach to covering Biodiversity across taxa (especially Animalia). These streams allowed students to collect data and record their observations (along with digital images) of various specimens and structures. Student research teams recorded and organized the observations that they made and analyzed their data in a phylogenetic framework. During these streams, students were able to work through a set of exercises designed to help them learn how to read, interpret, and manipulate phylogenetic trees (which tied-in well with SLOs 1, 4, 5). With acquisition of new equipment that happened in Spring 2015 and implementation (Fall 2015) of new hands-on inquiry based approaches in lab and lecture, not only we were able to meet the set SLO target but mean lab

Part 2.D. Review and comment on progress towards past program review goals:

Goal 1) Reform instructional methodology to include Inquiry-based learning. We are continuing to develop more inquiry-based hands on labs in our major's classes. We are also talking about doing so in our non-majors classes also.

Goal2) Improvement of student learning outcomes. The grade distribution in biology classes tend to follow a normal distribution curve. This suggest that we do not have any grade inflation going on. As mentioned previously, the success rate is lower than AVC rates.

Goal3) Develop an undergraduate research (UR) Program. Few faculty are conducting research with some of their students with some success. In 2015, two students presented their research at the Southern California Natural History Society meeting. Currently, we have one paper published and another one accepted for publication. Also, we have ongoing projects that involves students doing research. With the new MOUs (see 2b. opportunities) we expect more projects to be developed.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

<i>Program/Area Goal #</i>	<i>Goal supports which ILO/PLO/SLO/OO?</i>	<i>Description of Goal</i>	<i>Steps to be taken to achieve goal?</i>
Reform instructional methodology to include Inquiry-based learning.	ILOs 1,2 & 3 PLOs 1 & %	Instituting inquiry-based learning in more courses.	Having workshops on developing hands-on lab activities and rewriting lab manuals. Sharing literature on how to develop more

			inquiry-based labs. Finally, by purchasing more supplies and equipment we can develop more hands-on labs for students (this last part also applies to goal 2)
Improvement of student learning outcomes.	ILOs 1,2 & 3 PLOs 1-5	Increase student success rates.	Trying to develop way to identify students that are struggling earlier on in semester and referring them to proper services. Developing review workshops that students can attend when struggling.
Develop an undergraduate research (UR) Program.	ILOs 2 & 3 PLOs 1 & 5	Increasing faculty participation in mentoring student research.	A group of us is reading literature, attending UR conferences in order to get ideas on how to implement a permanent Ur program on campus.

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

Type of Resource Request	Summary of Request	New or Repeat Request	Amount of Request, \$	One-Time or Recurring Cost, \$	Contact's Name
Faculty	Hiring of 1-2 full-time (with one being A&P) instructors to replace upcoming retirements	repeat	54,00-80,000 (x2)	Recurring	Z. Nisani & D. Feickert
Classified Staff	None				
Technology	Two LCD monitors, mounted on the walls in UH 127	New	TBD	One-Time	D. Feickert
Technology	3D4 Medical Anatomy Apps for all iPads + faculty licenses	New	2400/year	Recurring	D. Feickert
Technology	Two Elmo MO-1 Visual Presenters	New	459/each	One-Time	D. Feickert
Technology	Four iPads with charging stations on mounted stands, linked to Anatomage table	New	TBD	One-Time	D. Feickert
Technology	ViewSonic PX747-4K Projector Ultra HD	New	1089	One-Time	D. Feickert
Physical/Facilities	Installing cabinets in UH 153	New	TBD	One-Time	Z. Nisani
Physical/Facilities	Opening in wall between UH 127 and Virtual Anatomy Lab	New	TBD	One-Time	D. Feickert

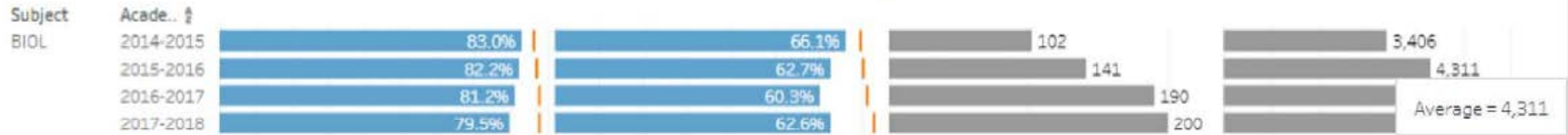
Supplies	Life-size human muscle figure	New	9750	One-Time	D. Feickert
Supplies	Teaching materials to outfit UH 133 and Palmdale Center	New	70,267.00 (x2)	One-Time	D. Feickert
Supplies	Replacement/upgrade equipment in UH 127 - \$17,138	repeat	17,138	One-Time	D. Feickert
Professional Development	None				
Other	Link Anatomage table to Instructor's desk controls in UH 127	New	TBD	One-Time	D. Feickert
other	Draw It To Learn It Online Licensing	New	TBD	One-Time	D. Feickert

Please Select **Subject** area (twice) and **Program Major** or Code to get your data -->

Select Subject: BIOL | Select Subject again: BIOL | and Select Major(s) for Program Aw...: (Multiple values) | or Select Major Code for Awards: (All) | Academic Year: (Multiple values)



Retention, Success, Number of Sections, & Enrollment in BIOL (Total AVC rates are shown as | hover over to see data)



Subject vs. AVC Annual Retention Rate

Subject vs. AVC Annual Success Rate

Number of Sections

Student Enrollment

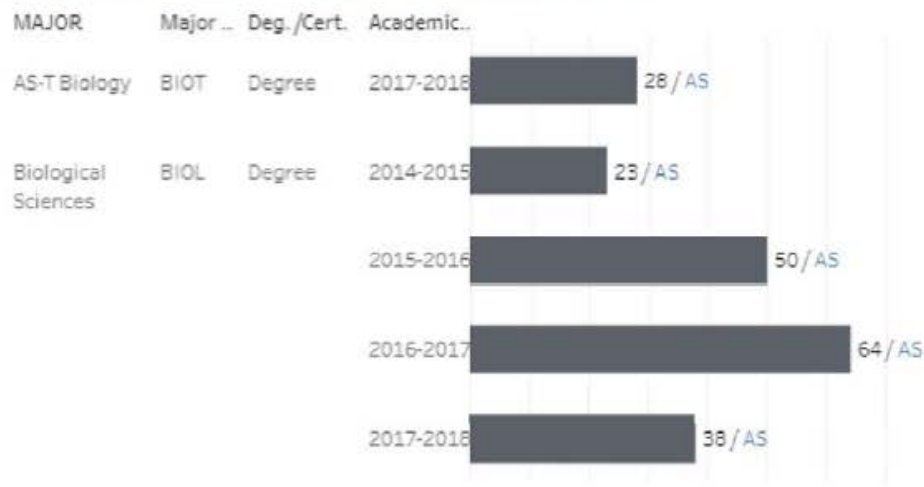
Enrollment and Number of Sections by *Modality* in BIOL

Instr. Met..	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections Online	6	11	12	17
Traditional	96	130	178	183
Enrollment Online	210	341	372	501
Traditional	3,196	3,970	4,898	5,051

Enrollment and Number of Sections by *Location* in BIOL

Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections Lancaster	97	135	184	192
Palmdale	5	6	6	8
Enrollment Lancaster	3,242	4,107	5,069	5,344
Palmdale	164	204	201	208

Number of Degrees/Certificates Awarded in BIOL & BIOT



Number of Awards

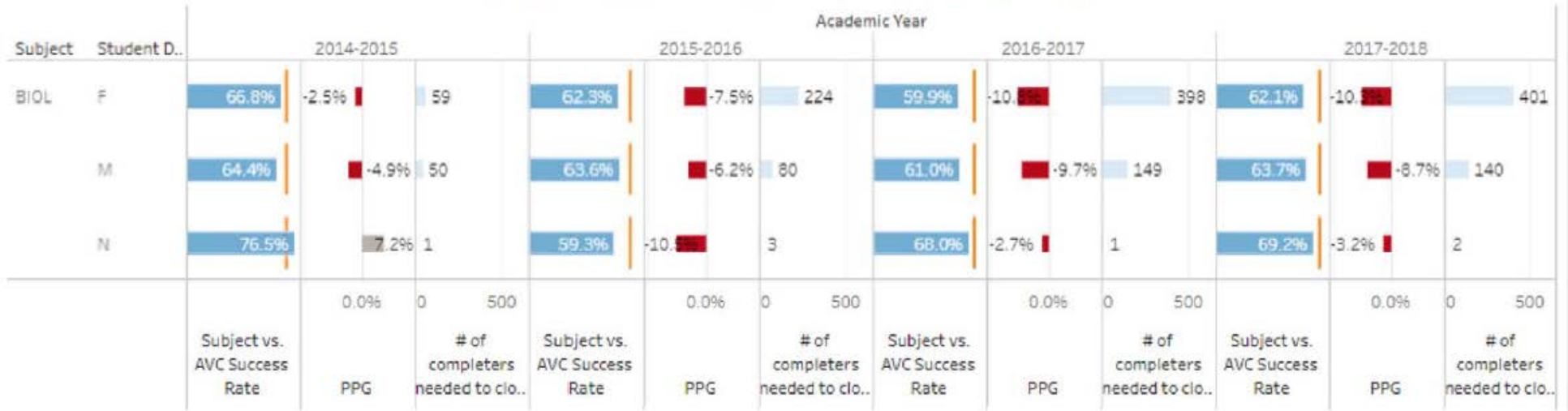
FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in BIOL

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	7.1	8.5	8.0	7.3
FT/Regular	12.5	12.6	12.0	13.7
FT/Overload	2.9	2.2	3.1	2.9
TOTAL FTEF	22.5	23.4	23.2	23.9
PT/FT	0.6	0.7	0.7	0.5
FTES	339.8	347.4	341.3	345.4
FTES/FTEF Ratio	15.1	14.8	14.7	14.4
WSCH/FTEF Ratio	452.4	445.4	441.4	433.0

Subject: (All) Academic Year: (Multiple values) Select Demographics: Gender



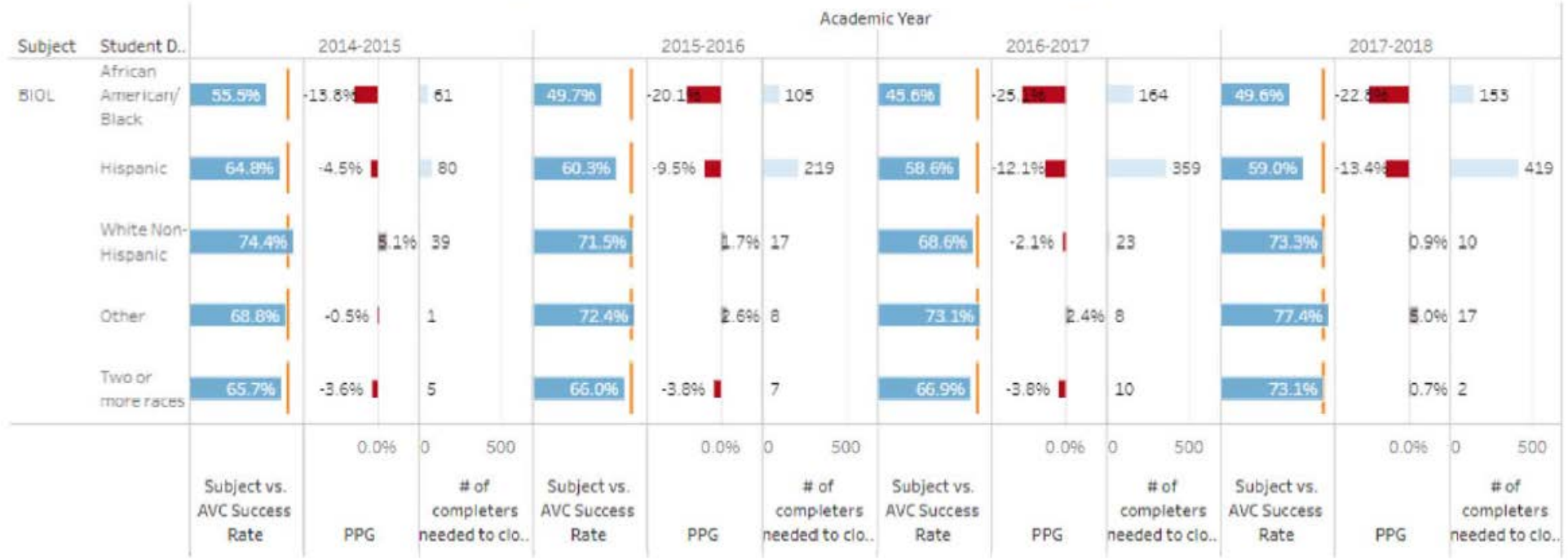
Disproportionate Impact as Percentage Point Gap (PPG)
 Subject Annual Success Rate vs. AVC Annual Success Rate (|)



Subject: (All) | Academic Year: (Multiple values) | Select Demographics: Race/Ethnicity



Disproportionate Impact as Percentage Point Gap (PPG)
 Subject Annual Success Rate vs. AVC Annual Success Rate (|)





2018-2019 Program Review Report

Division/Area Name: Mathematics	For Years: 2020-2021
Name of person leading this review: James Dorn	
Names of all participants in this review: James Dorn, Tooraj Gordi	

Part 1. Program Overview:

<p>1.1. Briefly describe how the program contributes to the district <u>mission</u>: The mathematics department is dedicated to providing a quality, comprehensive education to a diverse population of learners. Most awards at AVC have a math requirement so though we may not have an extensive number of degree pursuers, the impact of the department is widespread.</p>	
<p>1.2. State briefly program highlights and accomplishments: Our department will be fully AB705 compliant by Fall 2019. We have implemented a multiple measures placement procedure that is consistent with the provision set forth in AB705 and included in the placement model the idea of “Meta-majors” that will dovetail with the Guided Pathways Project. We identified six major pathways for all AVC students, developed and presented decision-making charts to counselors as an effort to guide students in their math course selection. We implemented an extensive collection of recurring workshops led by faculty to provide students with the support necessary to be successful in their math classes. We were able to secure access to graphing calculators to help ease the financial burden of statistics students and promote student success. The Mathematics Department has also been an active participant of the Math Research Experience in Community Colleges. Two AVC students and their faculty advisor, Dr. Tony Lam have worked together on the Neural Network Project and will present their work at the second annual MRECC Conference in CSUN. The Math Chat Group formed by several math faculty is now recognized by Faculty Professional Development and operates as the math faculty focus group. Department successfully continued its long-standing tradition of annual “Math Field Day”.</p>	
<p>1.3. Check each <u>Institutional Learning Outcome (ILO)</u> supported by the program.</p>	
<input checked="" type="checkbox"/> Communication	<input checked="" type="checkbox"/> Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis. <input type="checkbox"/> Demonstrates listening and speaking skills that result in focused and coherent communications
<input checked="" type="checkbox"/> Creative, Critical, and Analytical Thinking	<input checked="" type="checkbox"/> Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills. <input checked="" type="checkbox"/> Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.
<input type="checkbox"/> Community/Global Consciousness	<input type="checkbox"/> Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment. <input type="checkbox"/> Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.
<input checked="" type="checkbox"/> Career and Specialized Knowledge	<input checked="" type="checkbox"/> Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.

1.4. Check each Educational Master Plan (EMP)/Strategic Plan Goal supported by the program.
<input checked="" type="checkbox"/> Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.
<input type="checkbox"/> Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.
<input checked="" type="checkbox"/> Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.
<input checked="" type="checkbox"/> Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.
<input type="checkbox"/> Goal 5: Align instructional programs to the skills identified by the labor market.

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

Much of the efforts in the department have been centered on achieving AB705 compliance by Fall 2019. The forthcoming changes are significant and will have far reaching implications for the institution as a whole. The implementation of multiple measures as the sole instrument determining a student's placement and the mandate of placing students directly into transfer level mathematics are a monumental shift in practices, both of which are on track for full implementation by registration time this semester. The focus has shifted to devising mechanisms to support the expected large numbers of underprepared students entering transfer level math classes due to the potential budgetary impact of those students not successfully completing their math requirement within one year. The creation of these processes is ongoing.

Part 2.B. Analyze the [program review data](#) (please see the program review data retrieval instructions and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	Success and retention numbers continue to increase.
Weaknesses	Though increasing, our success rates are below our target of 70% (68.2%).
Opportunities	There is an opportunity to greatly increase the throughput percentage of students completing transfer level math courses.
Threats	The full effects of AB705 are unclear but there is a potential for a high percentage of under-prepared students entering transfer level classes. Additionally, a major area of impact could be a decrease in the total number of sections available affecting the ability to support the number of adjunct faculty currently utilized.

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

SLO data collection and action planning continues to be difficult due to several contributing factors. Of course, the lack of a centralized repository for SLO data is certainly a large part of this but hopefully eLumen will allow shifting the focus on planning rather than data collection and analysis. Another factor is that the mathematics department is most of the way through the process of changing the method for assessing SLOs, and the SLOs themselves, to be more meaningful, consistent between courses, and focus on student learning rather than specific content objectives. It is hoped that the remaining classes in the department will have their SLOs modified so training in assessment can continue. This process will allow a seamless assessment of PLOs.

Part 2.D. Review and comment on progress towards past program review goals:

Goal 1: Basic Skills Area, AB705, and Multiple Measures. Significant progress has been made in this area. AB705 compliance including Multiple Measures Placement is on track for full implementation this semester. Basic skills development is largely defunct, with exception to concurrent support, due to the provisions of AB705.

Goal 2: Technology. The renewal of Mathematica has been discontinued due to a lack of integration into the curriculum as thought but the expansion of Math 001 to the Palmdale campus is complete and will continue in subsequent semesters.

Goal 3: Addressing prospective AVC students. Though direct emphasis on basic skills as a program is no longer a main focus, the Summer Bridge, Academy at AVC, and SMAP programs have and continue to be successful in preparing students for transfer level courses.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

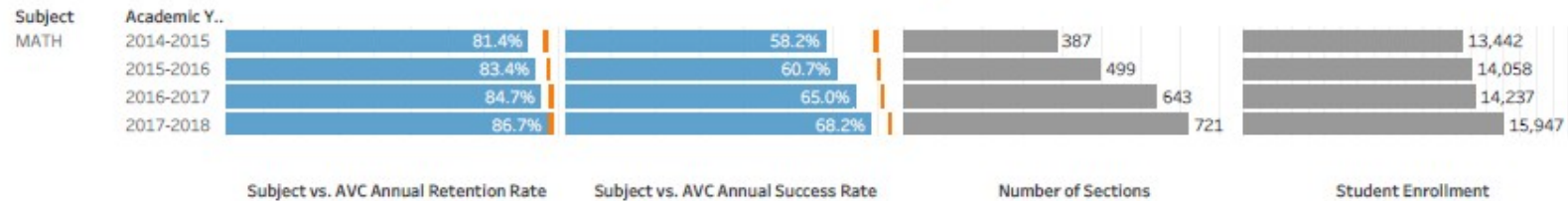
<i>Program/Area Goal #</i>	<i>Goal supports which ILO/PLO/SLO/OO?</i>	<i>Description of Goal</i>	<i>Steps to be taken to achieve goal?</i>
Goal #1	ILO/PLO/SLO	To fully implement a new SLO and PLO assessment procedure to focus on student learning that is consistent throughout the department.	Continue to modify the SLOs for outstanding courses and provide training to faculty in assessing outcomes using a department wide rubric.
Goal #2	PLO/ILO	To provide students with support options for just in time remediation to maximize opportunity of completing transfer level courses.	Design and implement both synchronous and asynchronous support mechanisms for students including Summer Bridge Programs, SMAP, and EdReady and Educsoft technology platforms.
Goal #3	ILO/PLO/SLO	Enhance best practices in Statistics instruction to increase student success due to the anticipated dramatic increase in the number of students enrolling in these sections.	Implement, either through FLC or recurring PDAs, faculty developed workshops focused on best practices in teaching Statistics for faculty who may have little or no experience in the teaching the subject.

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

<i>Type of Resource Request</i>	<i>Summary of Request</i>	<i>New or Repeat Request</i>	<i>Amount of Request, \$</i>	<i>One-Time or Recurring Cost, \$</i>	<i>Contact's Name</i>
Faculty	N/A				
Classified Staff	N/A				
Technology	Educsoft	New	\$4,000	Recurring	James Dorn
Physical/Facilities	SSV236 remodel	New	TBD	One-Time	James Dorn/Bill Carlson

Supplies	6 Dell tablet PCs/Smart Learning Suite	New	\$12,000	One-Time	James Dorn
Professional Development	Statistics Workshops for Faculty (Flex)	New		One-Time	James Dorn/Tony Lam
Other	Math Tutors and Workshop Space	Repeat	TBD	Recurring	James Dorn

Retention, Success, Number of Sections, & Enrollment in MATH (Total AVC rates are shown as |)



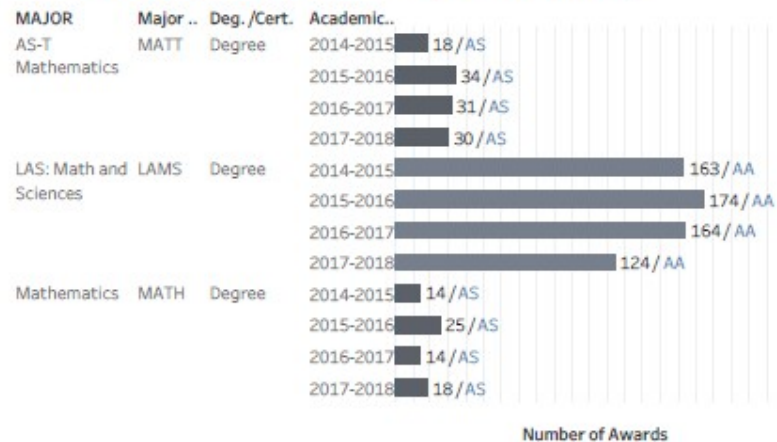
Enrollment and Number of Sections by *Modality* in MATH

	Instr. Method	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	Online	31	31	28	26
	Other Indep Study	1		2	4
	Traditional	355	468	613	691
Enrollment	Online	1,293	1,053	945	894
	Other Indep Study	1		2	8
	Traditional	12,148	13,005	13,290	15,045

Enrollment and Number of Sections by *Location* in MATH

	Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	Lancaster	334	444	597	671
	Lancaster [Off Ca..	1	5	6	6
	Palmdale	52	50	40	44
	Lancaster	11,433	12,309	12,739	14,499
Enrollment	Lancaster [Off Ca..	25	150	163	158
	Palmdale	1,984	1,599	1,335	1,290

Number of Degrees/Certificates Awarded in LAMS, MATH, MATT



FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in MATH

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	15.6	18.7	17.7	18.0
FT/Regular	17.5	17.5	18.0	21.9
FT/Overload	5.3	5.3	4.8	3.4
TOTAL FTEF	38.4	41.4	40.4	43.2
PT/FT	0.9	1.1	1.0	0.8
FTES	730.8	703.4	696.7	704.8
FTES/FTEF Ratio	19.0	17.0	17.2	16.3
WSCH/FTEF Ratio	570.7	509.6	517.2	489.0



2018-2019 Program Review Report

Division/Area Name: Astronomy	For Years: 2020-2021
Name of person leading this review: Mark McGovern	
Names of all participants in this review: Mark McGovern	

Part 1. Program Overview:

1.1. Briefly describe how the program contributes to the district <u>mission</u> : Astronomy provides courses that satisfy general education requirements. Completion of these courses allows students to fulfill degree requirements or enroll in upper division courses and programs at accredited four-year institutions through our articulation agreements.	
1.2. State briefly program highlights and accomplishments: The Virtual Science Lab has recently obtained a projector so that the room can now be fully utilized as a planetarium to support courses not just in astronomy but in other areas that can benefit from the 3D modeling and visualization that the equipment has to offer. Additionally, a great amount of outreach with the local community has begun in support of programs given at the college (e.g Welcome Center, AVC Foundation, etc.) and in the greater community (e.g. demonstrations for local elementary schools).	
1.3. Check each <u>Institutional Learning Outcome (ILO)</u> supported by the program.	
<input checked="" type="checkbox"/> Communication	<input checked="" type="checkbox"/> Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis. <input type="checkbox"/> Demonstrates listening and speaking skills that result in focused and coherent communications
<input checked="" type="checkbox"/> Creative, Critical, and Analytical Thinking	<input checked="" type="checkbox"/> Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills. <input checked="" type="checkbox"/> Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.
<input checked="" type="checkbox"/> Community/Global Consciousness	<input checked="" type="checkbox"/> Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment. <input type="checkbox"/> Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.
<input checked="" type="checkbox"/> Career and Specialized Knowledge	<input checked="" type="checkbox"/> Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.
1.4. Check each <u>Educational Master Plan (EMP)/Strategic Plan Goal</u> supported by the program.	
<input type="checkbox"/> Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.	
<input type="checkbox"/> Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.	
<input checked="" type="checkbox"/> Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.	
<input type="checkbox"/> Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.	
<input type="checkbox"/> Goal 5: Align instructional programs to the skills identified by the labor market.	

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

N/A

Part 2.B. Analyze the [program review data](#) (please see the program review data retrieval instructions and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	Rates of retention and success are above the average for AVC. Even among gender, race, and age groups no major deficiencies are seen in the data.
Weaknesses	N/A
Opportunities	N/A
Threats	N/A

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

In astronomy lecture courses, SLOs data highlighted the need for students to better visualize complicated 3D behavior of astronomical systems. This prompted faculty to acquire sky simulation software to incorporate in lecture demonstrations. This change was accomplished several years ago and improvements in SLOs pass rates (~10% improvement) have been witness. Additionally, with the acquisition of the VSL projector classes have recently begun to incorporate those visualizations during instruction.

In astronomy laboratory, SLOs data highlighted the need for students to better understand the working of the telescope and planning observation session. Faculty acquired a solar telescope, a set of reflecting telescope, and a set of star wheel and revised several labs to incorporate more of these activities in lab. Since their implementation SLO data has shown improvement in those areas after a couple year. Further refinement of lab activities have been done in recent years to improve these numbers further. Additionally, SLO data from laboratory class showed a similar lack of proper understanding of 3D behavior in astronomical systems. Sky simulation software activities have been incorporated in two different labs to address the difficulty.

Part 2.D. Review and comment on progress towards past program review goals:

Goals from previous program reviews were to increase student retention and success. Astronomy has seen retention rates stay high and success rates have been higher the past academic year compared to the previous three years.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

Program/Area Goal #	Goal supports which ILO/PLO/SLO/OO?	Description of Goal	Steps to be taken to achieve goal?
1	All ILOs, All SLOs in discipline	Increase student retention and success	Continue to analyze SLO data to improve any deficiencies

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

Type of Resource Request	Summary of Request	New or Repeat Request	Amount of Request, \$	One-Time or Recurring Cost, \$	Contact's Name
Faculty	Adjunct Faculty desired	New	Unknown		Mark McGovern
Classified Staff					
Technology	Purchase of software to operate fiber optic spectrograph. Additional shows for software.	New	~10,000		Mark McGovern
Physical/Facilities	Observation Deck fitted for mounting telescope	Repeat	unknown		Mark McGovern
Supplies	New handheld telescope and replacement of two five inch reflectors.	New	~\$500		Mark McGovern
Professional Development	Additionally training for the operation of	New	~\$1000		Mark McGovern
Other					N/A

Please Select **Subject** area and **Program** Name or Code to get your data ----->

Select Subject
ASTR

Select Subject **again**
ASTR

Select Major(s) for Program Awards
Multiple values

or Select Major Code for Awards
None

Academic Year
Multiple values



Retention, Success, Number of Sections, & Enrollment in ASTR (Total AVC rates are shown as |)

Subject	Academic Y..	Retention Rate	Success Rate	Number of Sections	Student Enrollment
ASTR	2014-2015	90.8%	78.9%	11	327
	2015-2016	93.4%	80.3%	11	319
	2016-2017	93.6%	73.6%	11	295
	2017-2018	92.0%	84.3%	11	324

Subject vs. AVC Annual Retention Rate

Subject vs. AVC Annual Success Rate

Number of Sections

Student Enrollment

Enrollment and Number of Sections by *Modality* in ASTR

	Instr. Met..	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	Online	1	1	1	1
	Traditional	10	10	10	10
Enrollment	Online	38	38	29	42
	Traditional	289	281	266	282

Enrollment and Number of Sections by *Location* in ASTR

	Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	Lancaster	11	11	11	11
	Lancaster	327	319	295	324

Number of Degrees/Certificates Awarded in None

FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in ASTR

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
FT/Regular	0.8	0.8	0.6	0.8
FT/Overload	0.2	0.2	0.4	0.2
TOTAL FTEF	1.0	1.0	1.0	1.0
PT/FT				0.0
FTES	15.2	15.7	15.6	16.2
FTES/FTEF Ratio	15.7	16.3	16.2	16.8
WSCH/FTEF Ratio	471.4	487.6	485.4	503.1



2018-2019 Program Review Report

Division/Area Name: Chemistry Department	For Years: 2020-2021
Name of person leading this review:	Alex Schroer, Jessica Harper
Names of all participants in this review:	Alex Schroer, David Newman, Carlos Hernandez, Jessica Harper, Jeff Cooper

Part 1. Program Overview:

<p><i>1.1. Briefly describe how the program contributes to the district mission:</i> Chemistry is in the top 6 in the percentage of all AVC's FTES (3.1% in 2017-2018 as compared to 2.8% in 2013-2014). The number of FTES in 2017-18 was 340. Chemistry classes are part of the AS-T Chemistry, LAS-Math and Sciences, and Physical Sciences degrees. Chemistry is a prerequisite for various biology courses, kinetics courses and the nursing program.</p>	
<p><i>1.2. State briefly program highlights and accomplishments:</i> AS-T Chemistry has been established and 16 students earned this degree in its first year available. Secured funding for HPLC, a new laboratory instrument, Spartan computational modeling program, and new set of classroom laptops. Have successfully integrated previously purchased instrumentation into curriculum for CHEM 120, 210, 220. Increased number of sections offered for majors courses, including offering CHEM 110 during intersession.</p>	
<p><i>1.3. Check each Institutional Learning Outcome (ILO) supported by the program.</i></p>	
X Communication	<p>X Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis. X Demonstrates listening and speaking skills that result in focused and coherent communications</p>
X Creative, Critical, and Analytical Thinking	<p>X Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills. X Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.</p>
X Community/Global Consciousness	<p>X Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment. X Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.</p>
X Career and Specialized Knowledge	<p>X Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.</p>
<p><i>1.4. Check each Educational Master Plan (EMP)/Strategic Plan Goal supported by the program.</i></p>	

X Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.
X Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.
X Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.
X Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.
X Goal 5: Align instructional programs to the skills identified by the labor market.

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

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Part 2.B. Analyze the [program review data](#) (please see the [program review data retrieval instructions](#) and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	Increased Organic Chemistry sections, room for growth. New, research quality laboratory equipment available for course curriculum and student projects. New laptops.
Weaknesses	General chemistry and introductory chemistry have the identical math prerequisite. Students often select general chemistry before they are ready. Limited technician support for nights and weekends; instrument maintenance needed.
Opportunities	AS-T Chemistry was established in 2017/18. 16 students earned this degree. As faculty continue to promote this degree to students, awards should increase. In order to expand offerings for organic chemistry, to accommodate growth from the general chemistry pipeline and support transfer students who need that class, scheduled classes have been allowed to proceed even with low enrollment. Facilities at Palmdale are underused. Promoting this resource could promote student enrollment and success.
Threats	Loss of dean; too much overload for full time faculty; adjunct faculty pool is too small

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

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Part 2.D. Review and comment on progress towards past program review goals:

Met Goal #1 (AS-T degree available) Goal #2 There is no consistent trend relating to the achievement gap in success rates among racial/ethnic groups Goal #3 Retention and success were trending upwards for most of the period of review. Partially met Goal #4 Instrumentation was purchased and is successfully being integrated into curriculum and used by honors students. Training and maintenance for the instrumentation as an ongoing need.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

<i>Program/Area Goal #</i>	<i>Goal supports which ILO/PLO/SLO/OO?</i>	<i>Description of Goal</i>	<i>Steps to be taken to achieve goal?</i>
Goal #1	ILO/PLO/SLO	Hire additional faculty	Advertising
Goal #2	ILO/PLO/SLO	Increase the number of AS-T chemistry awards	Continue to expand course offerings
Goal #3	ILO/PLO/SLO	Undergraduate research	Incorporate into labs

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

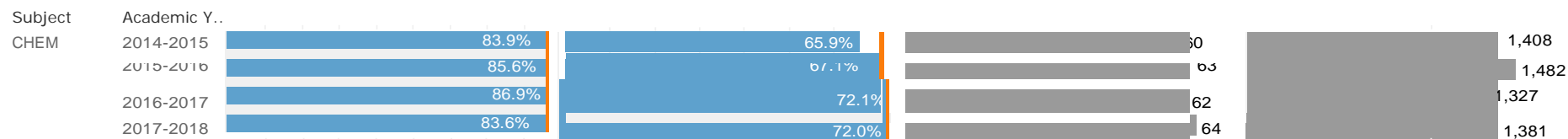
<i>Type of Resource Request</i>	<i>Summary of Request</i>	<i>New or Repeat Request</i>	<i>Amount of Request, \$</i>	<i>One-Time or Recurring Cost, \$</i>	<i>Contact's Name</i>
Faculty	(Full time hire in process.) Need adjunct faculty.	New	TBD	recurring	Chemistry Department
Classified Staff	Night/weekend lab technician with instrumentation experience	Repeat	TBD	recurring	Chemistry Department
Technology					
Physical/Facilities	Lab rooms shared with SOAR high school are needed for increased chemistry offerings and consistent schedule.				
Supplies	Increasing organic classes requires additional organic glassware and chemicals.		40K	recurring	Chemistry Department
Professional Development	Training on instrumentation; Travel to professional conferences	Repeat	\$10K	recurring	Chemistry Department
Other	Student help to support instructors during labs		TBD		

Please Select **Subject** area and **Program** Name or Code to get your data ----->

Select Subject CHEM Select Subject **again** CHEM Select Major(s) for Program Awards Multiple values or Select Major Code for Awards All Academic Year All



Retention, Success, Number of Sections, & Enrollment in CHEM (Total AVC rates are shown as |)



Subject vs. AVC Annual Retention Rate

Subject vs. AVC Annual Success Rate

Number of Sections

Student Enrollment

Enrollment and Number of Sections by **Modality** in CHEM

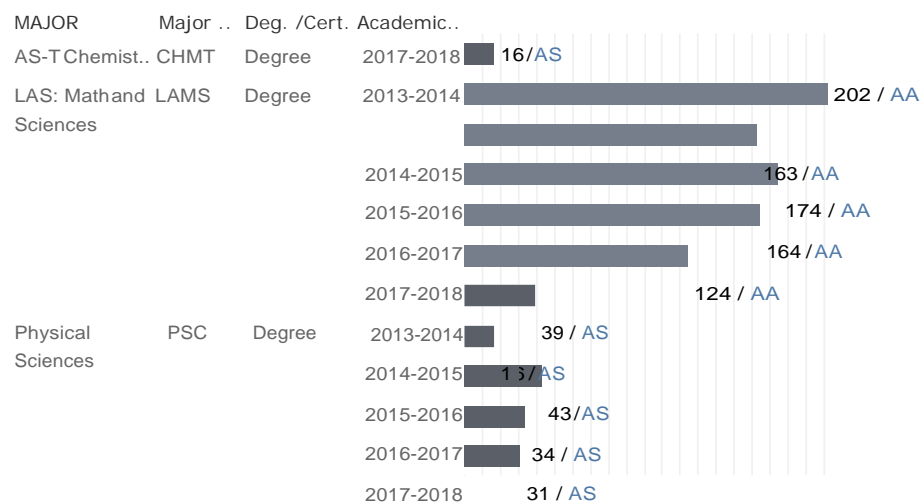
Enrollment and Number of Sections by **Location** in CHEM

Instr. Met.	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections - Online	1				
Number of Sections - Traditional	55	60	63	62	64
Enrollment - Online	21				
Enrollment - Traditional	1,271	1,408	1,482	1,327	1,381

Location	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections - Lancaster	54	58	61	60	63
Number of Sections - Palmdale	2	2	2	2	1
Enrollment - Lancaster	1,243	1,361	1,435	1,306	1,361
Enrollment - Palmdale	49	47	47	21	20

Number of Degrees/Certificates Awarded in **CHMT, LAMS, PSC**

FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in CHEM



Number of Awards

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	3.8	4.3	5.9	4.3
FT/Regular	4.5	4.7	4.5	4.7
FT/Overload	1.8	1.7	2.3	1.7
TOTAL FTEF	10.1	10.7	12.7	10.7
PT/FT	0.9	0.9	1.3	0.9
FTES	151.3	161.7	151.1	138.9
FTES/FTEF Ratio	15.0	15.2	11.9	13.0
WSCH/FTEF Ratio	450.8	454.8	357.4	390.6



2018-2019 Program Review Report

Division/Area Name: MSE / Engineering	For Years: 2020-2021
Name of person leading this review: Jonathan Compton	
Names of all participants in this review: Jonathan Compton, Christos Valiotis	

Part 1. Program Overview:

<p><i>1.1. Briefly describe how the program contributes to the district mission:</i></p> <p>We continue to serve a diverse population within engineering. We have a strong Hispanic student base, as well as an increased enrollment of women. In 2018, the STEM program and particularly the engineering department was awarded a \$3.75 million grant from US Department of Education under the Hispanic Serving Institutions program. We encourage not only more diversity racially, but also when it comes to the gender gap for engineering to increase the completion of women in engineering.</p>	
<p><i>1.2. State briefly program highlights and accomplishments:</i></p> <p>The program is fully C-ID articulated. We have also split our old Engineering degree into three separate degree pathways, based on the approved model curriculum, for each major discipline: Mechanical, Electrical, and Computer Engineering. We have helped CSULB- AV Engineering Program obtain ABET accreditation and currently we transfer more than 75% of the students enrolled in that degree completion program.</p>	
<p><i>1.3. Check each Institutional Learning Outcome (ILO) supported by the program.</i></p>	
<input checked="" type="checkbox"/> Communication	<input checked="" type="checkbox"/> Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis. <input checked="" type="checkbox"/> Demonstrates listening and speaking skills that result in focused and coherent communications
<input checked="" type="checkbox"/> Creative, Critical, and Analytical Thinking	<input checked="" type="checkbox"/> Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills. <input checked="" type="checkbox"/> Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.
<input checked="" type="checkbox"/> Community/Global Consciousness	<input checked="" type="checkbox"/> Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment. <input checked="" type="checkbox"/> Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.
<input checked="" type="checkbox"/> Career and Specialized Knowledge	<input checked="" type="checkbox"/> Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.
<p><i>1.4. Check each Educational Master Plan (EMP)/Strategic Plan Goal supported by the program.</i></p>	
<p>Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.</p>	

<input checked="" type="checkbox"/> Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.
<input checked="" type="checkbox"/> Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.
<input checked="" type="checkbox"/> Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.
Goal 5: Align instructional programs to the skills identified by the labor market.

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

On an annual basis, we monitor graduation data from the local Engineering program administered by CSU Long Beach. Since 2012, the program has graduated 119 students more than 75% of which are AVC transfers. As of December 2018, all of those students have secured employment before graduation.

Part 2.B. Analyze the [program review data](#) (please see the program review data retrieval instructions and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	Our retention (>90%) and success rates (~85%) are very good for such a difficult major
Weaknesses	We have a low number of degree completions
Opportunities	We expect an increase in degree completions with the new pathways approach
Threats	I am concerned with the new block scheduling as it can directly impact the availability of my adjunct that work in local industry. This can be detrimental for night classes in Engineering.

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

Due to the lack of SLO tracking data, action plans have been hard to form.
 Looking at our past information:
 SLO: The funding of our computer lab has increased student efficiency and success. We have up to date software and hardware to fully support computer lab courses.
 PLO: Appropriate lab for engineering – We have held our lab courses (minus ENGR 185) in the modernized engineering lab. This has helped not only the instructors feel confident teaching, but has aided the students by being in the correct environment for learning.
 We still need to make our lab an official lab room with workbenches versus the current desks as this makes most engineering projects rather difficult to complete. Especially when the campus construction begins as this will force our ENGR 185 lab course to be held here as well.

Part 2.D. Review and comment on progress towards past program review goals:

Goal #1: **Offer AS in Engineering TMC at AVC:** There is no formal agreement to offer an AS-T statewide due to the high number of units and the large diversity among the engineering disciplines. Instead, AVC is currently exploring the option of revising the existing local engineering degree to include three different tracks: 1) Mechanical, Bio, Aero; 2) Electrical and 3) Computer Engineering. Two of the degree went live in Fall 2018 and the last will be live Fall 2019.
 Goal #2: **Close Achievement Gaps in Success Rates Among Racial/Ethnic Groups** This is an ongoing effort. African American students still achieving at a much lower rate than their peers. Since this is a college wide occurrence, engineering faculty are willing to collaborate with other areas to explore ways of closing

the achievement gaps of AA students. New demographic information was not made available, but our new grant will support this goal through the use of a program director and full time counselor imbedded into our new STEM center.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

<i>Program/Area Goal #</i>	<i>Goal supports which ILO/PLO/SLO/OO?</i>	<i>Description of Goal</i>	<i>Steps to be taken to achieve goal?</i>
1	ILO / PLO	Increase engineering degree completions	We have implemented the pathways approach that will allow students to declare engineering as their major without sacrificing by taking extra units. We now need to gather data of completions over the next review cycle.
2	PLO / SLO	Increase the success of our courses that contain hands on lab sections	We need to come up with a room layout that will allow for benchtops with power drop downs to be placed in the lab and the subsequent funding for such a change. This will support the following courses: ENGR 130L, ENGR 185 (w/ Lab), and ENGR 230 (w/ Lab).

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

<i>Type of Resource Request</i>	<i>Summary of Request</i>	<i>New or Repeat Request</i>	<i>Amount of Request, \$</i>	<i>One-Time or Recurring Cost, \$</i>	<i>Contact's Name</i>
Faculty	Second faculty member	Repeat	\$100,000 (Salary and Benefits)	Recurring	Jonathan Compton
Classified Staff	Lab tech to support engineering	New	\$60,000 (Salary and Benefits). A new full-time lab tech is expected to begin as of April 2019, but this is a grant funded position. For	Recurring	Jonathan Compton

			sustainability purposes this position should transition to district funding asap.		
Technology					
Physical/Facilities	Benchtops and tall chairs for Engineering lab (APL 116) to support electronics work. We would also need electrical drop downs power sources on the benchtops.	New	\$45,000	One-Time	Jonathan Compton
Supplies	Consumables for the Engineering labs	Repeat	\$6,000	Recurring	Jonathan Compton
Professional Development	California Engineering Liaison Council bi-annual meetings	New	\$1,500	Recurring	Jonathan Compton
Other					

Please Select **Subject** area and **Program** Name or Code to get your data ----->

Select Subject
ENGR

Select Subject **again**
ENGR

Select Major(s) for Program Awards
Engineering

or Select Major Code for Awards
All

Academic Year
Multiple values



Retention, Success, Number of Sections, & Enrollment in ENGR (Total AVC rates are shown as |)



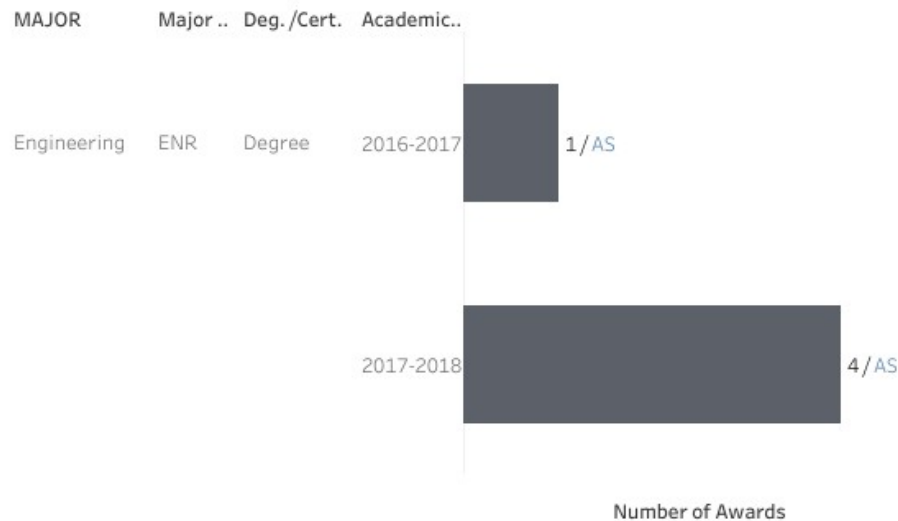
Enrollment and Number of Sections by **Modality** in ENGR

	Instr. Method	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	Other Indep Study	2			
	Traditional	24	28	21	21
	Work Experience	1	2		
Enrollment	Other Indep Study	6			
	Traditional	430	533	376	379
	Work Experience	1	2		

Enrollment and Number of Sections by **Location** in ENGR

	Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	Lancaster	27	30	21	21
Enrollment	Lancaster	437	535	376	379

Number of Degrees/Certificates Awarded in ENR



FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in ENGR

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	2.1	2.0	1.0	1.0
FT/Regular	0.8	1.1	1.1	1.5
FT/Overload				0.3
TOTAL FTEF	2.9	3.1	2.1	2.8
PT/FT	2.7	1.9	0.9	0.7
FTES	30.0	34.6	19.6	28.3
FTES/FTEF Ratio	10.2	11.3	9.3	10.2
WSCH/FTEF Ratio	307.3	338.0	280.1	307.1



2018-2019 Program Review Report

Division/Area Name: Geosciences (Earth Science, Geography, Geology)	For Years: 2020-2021
Name of person leading this review: Mike Pesses	
Names of all participants in this review: Aurora Burd, Paul Stahmann	

Part 1. Program Overview:

1.1. Briefly describe how the program contributes to the district <u>mission</u> : <i>The Geosciences Department contributes to the institution's "quality, comprehensive education" by offering rigorous courses that lead to associates degrees, transfer, and career technical education.</i>	
1.2. State briefly program highlights and accomplishments: <i>The Geosciences Department now provides the largest amount of transfer students to California State University, Northridge's Department of Geography and Environmental Sciences. CSUN's department values the quality and commitment of our transfer students and actively recruits them.</i>	
1.3. Check each <u>Institutional Learning Outcome (ILO)</u> supported by the program.	
X Communication	<p>X Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis.</p> <p><input type="checkbox"/> Demonstrates listening and speaking skills that result in focused and coherent communications</p>
X Creative, Critical, and Analytical Thinking	<p>X Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills.</p> <p>X Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.</p>
X Community/Global Consciousness	<p>X Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment.</p> <p>X Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.</p>
X Career and Specialized Knowledge	X Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.
1.4. Check each <u>Educational Master Plan (EMP)/Strategic Plan Goal</u> supported by the program.	
<input type="checkbox"/> Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.	
<input type="checkbox"/> Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.	
X Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.	
<input type="checkbox"/> Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.	

X Goal 5: Align instructional programs to the skills identified by the labor market.

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

N/A

Part 2.B. Analyze the [program review data](#) (please see the [program review data retrieval instructions](#) and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	<p>Our success rates show an overall trend of improvement with an average of 70.5% across the four-year study which is equivalent to the campus wide success rate for the same time period. While we have not conducted anything like official job placement surveys, we constantly receive updates from past students who have completed bachelors and graduate degrees as well as gained meaningful employment in geography, geology, or related fields. Our past students and faculty at other institutions have all commented on how well our classes and programs prepare students for transfer. ERSC 101 has increased from 49 students served in 2014-2015 to 78 served in 2017-2018, even though a MATH 102 pre-req was added for Fall 2017. Students reportedly enjoy having both a morning and afternoon ERSC 101 option or morning and evening ERSC 101 option available each semester. Likewise, geology enrollment increased from 384 students in 2016-2017 to 422 in 2017-2018, again with a MATH 102 pre-req added.</p>
Weaknesses	<p>We still struggle to get the word out on what our department offers students in terms of major and career opportunities. Our student enrollment has been decreasing despite the increasing job prospects for students majoring in the geosciences. Many courses are not running lately due to low enrollment, despite the transfer and job skills they provide. The counseling division has recently reached out to work with us which will hopefully help.</p> <p>Lab and hands-on classes like ERSC 101, the geography and geology labs, and all GIS courses, suffer from a lack of a dedicated lab technician. Faculty struggle to get maps, rocks, or other lab materials prepared, maintained, and put away for each class. The upkeep of equipment like the GIS plotter is another burden for faculty. Having an employee in charge of the lab equipment and materials would save faculty time as well as the embarrassment of not being able to find something for a lab class to use. While the data might not reveal it, lab classes have had to be simplified due to a lack of support. Heavy rock samples are left in the cabinets to expedite set up, or compass based 'field' activities are cancelled due to disappearing and broken equipment. Students deserve richer and more stimulating lab classes.</p> <p>Hands on classes like ERSC 101, GEOL 101, and GEOL 102 benefit from being in a room in UH near the rock samples. It is daunting to teach in SSV or APL and to have to try to move heavy, unwieldy demonstration materials to these locations.</p>

	It is important that GEOL and GEOG majors be able to travel to see geology/geography outside the classroom. While AVC has increased their number of 8/10 person vans, trips requiring the bus also require a driver. It is disappointing when a planned, board-approved trip is cancelled when the bus is available but Facilities can not find a driver for the trip.
Opportunities	The environment is at the top of mind for many these days. Students are interested in climate change, extreme weather, geologic hazards, and use of geologic resources (including energy resources) as well as political action toward dealing with such things. We should be able to capitalize on this interest to fill classes and increase the students choosing the geosciences as a major.
Threats	<p>Many geology majors seem to be struggling to complete their AS-T Geology on time, mainly due to poor math skills and struggle to complete the math sequence required for the degree. Because there are no geology electives (e.g. GEOL 105, 110, etc.) these students seem to have a gap of 2 or more years after their last geology class before they transfer, and we are concerned that they forget their geology content during that gap. Hopefully outreach to the counseling division will help ensure that students are appropriately counseled to start and complete their math coursework in a timely fashion. This problem is likely worsened by the AS-T geology capstone courses only running every two years.</p> <p>Enrollment continues to be low at Palmdale Center, with sections being cancelled regularly for low enrollment, which is threatening to faculty assigned to teach at Palmdale. Not sure of a suggested remedy, but perhaps it would help to rotate the lectures/labs offered at Palmdale so that there are not too many geoscience offerings at that location in a given semester.</p>

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

Our overall success rates have been improving which might be the result of a new faculty member, new textbooks, and the other action plans instituted by the department. The transition to eLumen provides an opportunity to review our current SLOs and most likely reduce the number per class as well as focus on critical thinking rather than specific course knowledge.

Part 2.D. Review and comment on progress towards past program review goals:

One of our biggest goals was to secure funding for a new faculty member in the geosciences, which was in part achieved by splitting a position with Physical Science. We have not yet obtained a lab technician dedicated to the geology, Earth science, geography, and geographic information systems labs is the next important goal. Enrollment in ERSC and GEOL continues to increase, and PHYS and PSCI continue to fill nearly all sections offered, so a future goal might be to allow the faculty member in the split position to move to 100% geoscience, while PHYS and PSCI hire a new faculty member split between PHYS and PSCI.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

Program/Area Goal #	Goal supports which ILO/PLO/SLO/OO?	Description of Goal	Steps to be taken to achieve goal?
1. Counseling Outreach	ILOs 1-4	Work with counseling to attract more students to our classes and programs.	Meet with counseling to design brochures or other materials to inform students.

2. Lab Technician	All lab course SLOs	Hire a dedicated lab tech for geoscience classes.	Work with chair, dean, and budgeting process

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

<i>Type of Resource Request</i>	<i>Summary of Request</i>	<i>New or Repeat Request</i>	<i>Amount of Request, \$</i>	<i>One-Time or Recurring Cost, \$</i>	<i>Contact's Name</i>
Faculty					
Classified Staff	Geoscience Lab Technician	Repeat	Current Lab Tech Salary and Benefits	Recurring Salary, Benefits	
Technology	Sunspotter	New	\$470 plus tax	One Time	David Bermea
Physical/Facilities					
Supplies	Sighting Compasses for lab activities See attached list including supplies for geology classes as well as expansion of lab activities for meteorology and oceanography portions of ERSC 101 and GEOG courses.	New	1500 (25 x \$60)	One Time	
Professional Development					
Other	Outreach funding, possibly through AV Foundation, Student Equity, or other sources to take geology/geography majors and prospective majors on field trips to local 4YC to help facilitate successful transfer and to nearby geoscience conferences (e.g. GSA Cordilleran Section regional meetings) to help students learn about careers in the geosciences.	New	?	Annual Cost?	

Please Select **Subject** area and **Program** Name or Code to get your data ----->

Select Subject
ERSC

Select Subject **again**
ERSC

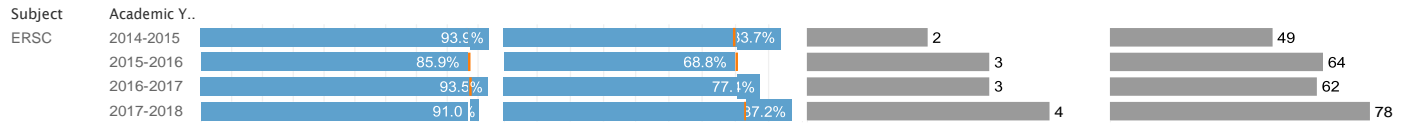
Select Major(s) for Program Awards
None

or Select Major Code for Awards
All

Academic Year
Multiple values



Retention, Success, Number of Sections, & Enrollment in ERSC (Total AVC rates are shown as |)



Subject vs. AVC Annual Retention Rate

Subject vs. AVC Annual Success Rate

Number of Sections

Student Enrollment

Enrollment and Number of Sections by **Modality** in ERSC

Instr. Met..	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	2	3	3	4
Enrollment	49	64	62	78

Enrollment and Number of Sections by **Location** in ERSC

Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	2	3	3	4
Enrollment	49	64	62	78

Number of Degrees/Certificates Awarded in [AAA, AAHT, AAP and 157 more](#)

FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in ERSC

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
FT/Regular	0.4	0.2	0.2	0.8
FT/Overload		0.2	0.2	
TOTAL FTEF	0.4	0.4	0.4	0.8
PT/FT				0.0
FTES	5.2	4.4	4.1	7.1
FTES/FTEF Ratio	13.0	10.9	10.4	8.8
WSCH/FTEF Ratio	388.5	326.3	310.5	264.4

Please Select **Subject** area and **Program** Name or Code to get your data ----->

Select Subject
GEOG

Select Subject **again**
GEOG

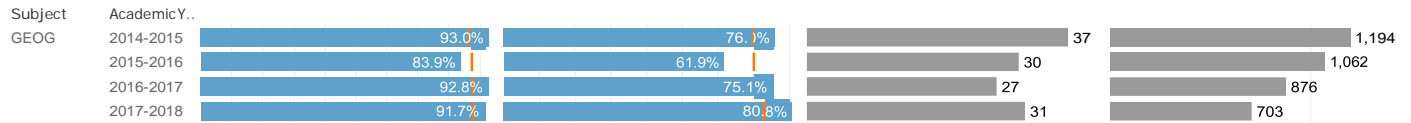
Select Major(s) for Program Awards
Multiple values

or Select Major Code for Awards
All

Academic Year
Multiple values



Retention, Success, Number of Sections, & Enrollment in GEOG (Total AVC rates are shown as |)



Subject vs. AVC Annual Retention Rate

Subject vs. AVC Annual Success Rate

Number of Sections

Student Enrollment

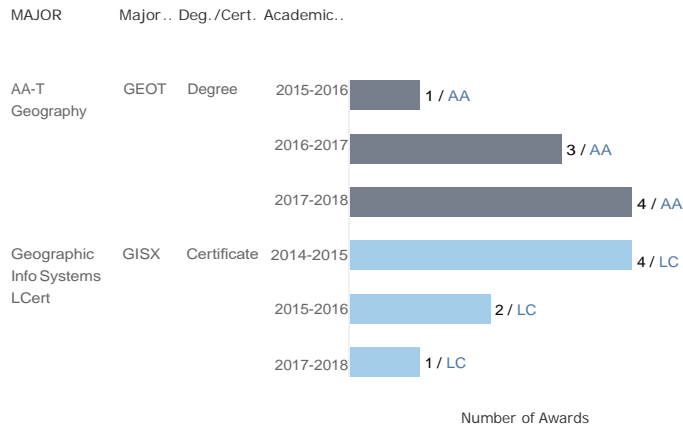
Enrollment and Number of Sections by Modality in GEOG

Instr. Method	2014-2015	2015-2016	2016-2017	2017-2018
Online				
Other Indep Study				
Traditional				

Enrollment and Number of Sections by Location in GEOG

Location	2014-2015	2015-2016	2016-2017	2017-2018
Lancaster	29	25	22	26
Palmdale	8	5	5	5

Number of Degrees/Certificates Awarded in GEOT & GISX



FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in GEOG

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	1.7	1.1	1.3	1.1
FT/Regular	1.0	1.1	1.1	1.0
FT/Overload	0.5	0.3		
TOTAL FTEF	3.3	2.6	2.5	2.1
PT/FT	1.7	1.0	1.2	1.2
FTES	54.6	49.7	41.2	26.2
FTES/FTEF Ratio	16.7	19.4	16.7	12.5
WSCH/FTEF Ratio	501.0	580.8	501.6	374.3

Please Select **Subject** area and **Program** Name or Code to get your data ----->

Select Subject
GEOL

Select Subject **again**
GEOL

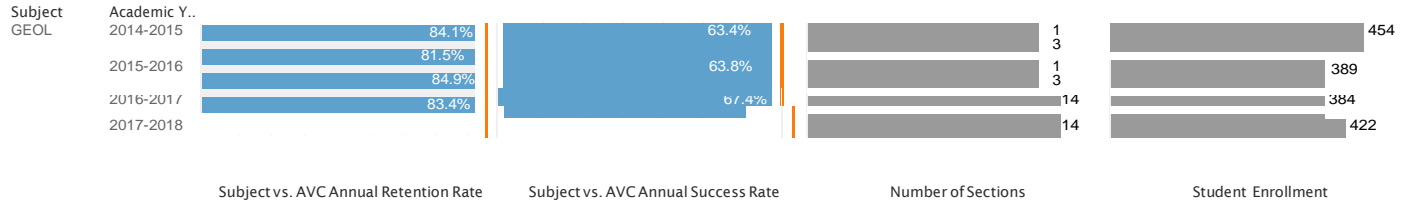
Select Major(s) for Program Awards
None

or Select Major Code for Awards
All

Academic Year
Multiple values



Retention, Success, Number of Sections, & Enrollment in **GEOL** (Total AVC rates are shown as |)



Enrollment and Number of Sections by **Modality** in **GEOL**

Instr. Met..	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	13	13	14	14
Enrollment	454	389	384	422

Enrollment and Number of Sections by **Location** in **GEOL**

Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	10	10	13	12
Enrollment	348	308	358	380
	3	3	1	2
	106	81	26	42

Number of Degrees/Certificates Awarded in [AAA, AAHT, AAP and 157 more](#)

FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in **GEOL**

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	0.2	0.2	0.2	0.2
FT/Regular	0.8	0.9	1.0	0.7
FT/Overload	0.1			0.1
TOTAL FTEF	1.1	1.1	1.2	1.0
PT/FT	0.3	0.2	0.2	0.3
FTES	21.1	18.6	19.6	19.2
FTES/FTEF Ratio	19.2	17.4	16.3	19.2
WSCH/FTEF Ratio	576.5	522.0	489.5	577.2



2018-2019 Program Review Report

Division/Area Name: MSE/Physical Science	For Years: 2020-2021
Name of person leading this review: Paul Stahmann	
Names of all participants in this review: Dr. Alex Schroer, Paul Stahmann	

Part 1. Program Overview:

1.1. Briefly describe how the program contributes to the district <u>mission</u> : The Physical Science courses provide the students of AVC with a quality science education within a positive and inclusive learning environment which is dedicated to developing student understanding and appreciation of the relevancy of the physical sciences.	
1.2. State briefly program highlights and accomplishments:	
1.3. Check each <u>Institutional Learning Outcome (ILO)</u> supported by the program.	
<input checked="" type="checkbox"/> <input type="checkbox"/> Communication	<input checked="" type="checkbox"/> Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis. <input type="checkbox"/> Demonstrates listening and speaking skills that result in focused and coherent communications
<input checked="" type="checkbox"/> <input type="checkbox"/> Creative, Critical, and Analytical Thinking	<input checked="" type="checkbox"/> Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills. <input checked="" type="checkbox"/> Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.
<input type="checkbox"/> Community/Global Consciousness	<input type="checkbox"/> Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment. <input type="checkbox"/> Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.
<input type="checkbox"/> Career and Specialized Knowledge	<input type="checkbox"/> Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.
1.4. Check each <u>Educational Master Plan (EMP)/Strategic Plan Goal</u> supported by the program.	
<input checked="" type="checkbox"/> Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.	
<input checked="" type="checkbox"/> Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.	
<input checked="" type="checkbox"/> Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.	
<input type="checkbox"/> Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.	
<input type="checkbox"/> Goal 5: Align instructional programs to the skills identified by the labor market.	

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

--

Part 2.B. Analyze the [program review data](#) (please see the program review data retrieval instructions and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	Success rates and retention rates have remained stable over the four year period of 2014 – 2018. During this time, the program has remained well above the college average. Sections taught at the Lancaster main campus generally are filled to capacity. Having a full-time physical science lab technician is essential.
Weaknesses	Textbook materials were redundant and are being replaced.
Opportunities	Provide students with the most up-to-date equipment and technology. Improve quality of laboratory exercises.
Threats	Low enrollment at the Palmdale campus.

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

Achievement target is for all students to score 70% or above is in progress with higher success rates in the recent past.

Part 2.D. Review and comment on progress towards past program review goals:

Progress has been made in areas such as new full-time faculty hire, new equipment, and a physical science lab tech replacement.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

Program/Area Goal #	Goal supports which ILO/PLO/SLO/OO?	Description of Goal	Steps to be taken to achieve goal?
Improve quality of laboratory exercises.	ILOs 1-4	Faculty continue to improve lab materials being used to teach physical science.	Extra time spent to improve lab materials. Consultation with other faculty.

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

Type of Resource Request	Summary of Request	New or Repeat Request	Amount of Request, \$	One-Time or Recurring Cost, \$	Contact's Name
Faculty					
Classified Staff					
Technology	New laptops in the near future	New	~ \$12,000	One-time	Paul Stahmann, Alex Schroer
Physical/Facilities					

Supplies	On going budget to upgrade, replace, and acquire new equipment for the labs and demonstrations.	Repeat	Annual budget	Recurring	Paul Stahmann, Alex Schroer
Professional Development	Budget to attend national conferences where research and teaching ideas are shared.	New	\$2000	Annually	Paul Stahmann, Alex Schroer
Other					

Please Select **Subject** area and **Program** Name or Code to get your data ----->

Select Subject
PSCI

Select Subject **again**
PSCI

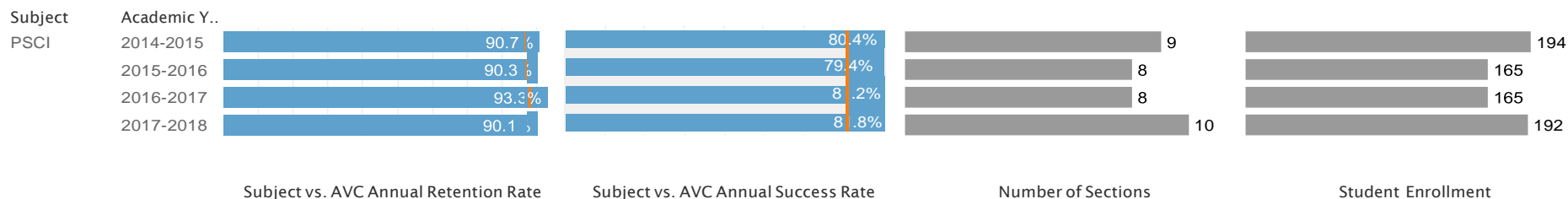
Select Major(s) for Program Awards
None

or Select Major Code for Awards
All

Academic Year
Multiple values



Retention, Success, Number of Sections, & Enrollment in **PSCI** (Total AVC rates are shown as |)



Enrollment and Number of Sections by **Modality** in **PSCI**

Instr. Met..	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	9	8	8	10
Enrollment	194	165	165	192

Enrollment and Number of Sections by **Location** in **PSCI**

Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	8	8	8	9
Enrollment	176	165	165	185

Number of Degrees/Certificates Awarded in [AAA, AAHT, AAP and 157 more](#)

FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in **PSCI**

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	0.8	0.4	0.8	0.6
FT/Regular	0.8	0.8	0.8	1.2
TOTAL FTEF	1.6	1.2	1.6	1.8
PT/FT	1.0	0.5	1.0	0.5
FTES	17.8	13.7	17.2	17.0
FTES/FTEF Ratio	11.1	11.4	10.7	9.5
WSCH/FTEF Ratio	334.1	341.8	322.3	283.8



2018-2019 Program Review Report

Division/Area Name: MSE/Physics	For Years: 2020-2021
Name of person leading this review:	Dr. Jason Bowen
Names of all participants in this review:	Dr. Jason Bowen, Dr. Mark McGovern, Christos Valiotis, Dr. Joe Towe

Part 1. Program Overview:

<p>1.1. Briefly describe how the program contributes to the district <u>mission</u>: The physics program at Antelope Valley College (AVC) provides a quality education in physics to a diverse population of students through: a highly engaging lecture environment, stimulating laboratory activities with new and modern equipment, faculty participation in the STEM Club, faculty participation in undergraduate research projects, and program participation in the joint AVC/California State University Long Beach AV Engineering Program.</p>	
<p>1.2. State briefly program highlights and accomplishments: Retention and success rates have increased year-over-year each academic year from 2014-2015 to 2017-2018. The trends are visible overall and within each demographic. Enrollment has also increased 33.3% during this period and the number of sections has increased from 18 to 22 throughout this same period. Physics leads the MSE Division and the Physical Sciences Department in retention and success rates and the Disproportionate Impact Percentage Point Gap has been decreased over a four-year period 17.2% to 8% and 13.5% to 9.1% among male and female students, respectively between 2014 and 2018.</p>	
<p>1.3. Check each <u>Institutional Learning Outcome (ILO)</u> supported by the program.</p>	
X Communication	<p>X Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis. X Demonstrates listening and speaking skills that result in focused and coherent communications</p>
X Creative, Critical, and Analytical Thinking	<p>X Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills. X Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.</p>
X Community/Global Consciousness	<p>X Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment. X Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.</p>
X Career and Specialized Knowledge	<p>X Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal enrichment.</p>
<p>1.4. Check each <u>Educational Master Plan (EMP)/Strategic Plan Goal</u> supported by the program.</p>	
<p>X Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.</p>	
<p>X Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.</p>	

X	Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.
X	Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.
X	Goal 5: Align instructional programs to the skills identified by the labor market.

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

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Part 2.B. Analyze the [program review data](#) (please see the program review data retrieval instructions and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify the program strengths, weaknesses, opportunities, & threats (SWOT):

Strengths	33.3% increase in enrollment and 767% increase in awarded AS-T Physics degrees over a four-year period from 2014 to 2018. Among female and male students a 53.5% and 32.6% reduction, respectively, in disproportionate impact percentage point gap, over the same time period. Overall retention and success rates have also improved over the same period for all demographics.
Weaknesses	Section growth has stalled and enrollment has remained flat year-over-year from 2016-2017 to 2017-2018.
Opportunities	Enrollment and section growth opportunities and opportunities for improvements in retention and success rates
Threats	Deficiencies in adjunct, full-time, and laboratory technician staffing which can limit further growth

Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

Past Action Plans have emphasized greater focus on communicating the underlying conceptual understanding students must develop to succeed. A greater emphasis has been placed on classroom discussion of conceptual ideas and accessing in real-time during classroom discussions student conceptual understanding of current topics and adjusting instruction to address student understanding. Additionally, more homework activities of a conceptual nature have been administered. SLO data helps to identify the areas that need more attention. Focus on laboratory activities were adjusted in the last couple of years in response to SLO data showing that students were not comprehending the principles and processes involved in collecting data and analyzing it. We acquired some new equipment in the last couple of years to create a more hands-on approach to understanding Coulomb's law and electric fields. Emphasis has also been placed on data analysis. This is an ongoing process as we make adjustments to lab activities to help students with the process of collecting data, understanding error analysis, and how to visually represent the data when it is deemed important.

Part 2.D. Review and comment on progress towards past program review goals:

The goal to increase the number of degrees awarded has been completed. The current goal established in the 2016-2017 academic year is to realize a 10% annual year-over-year annual increase in the number of awarded AS-T degrees in Physics. The most recent year-over-year change was an increase of 62.5% in number of degrees awarded.

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

Program/Area Goal #	Goal supports which ILO/PLO/SLO/OO?	Description of Goal	Steps to be taken to achieve goal?
2	1,2	Continued use of real-time assessment methods	Classroom implementation; ongoing
1	3	Increase in retention and success rates observed	Ongoing
4	3,4	The most recent year-over-year change was an increase of 62.5% in number of degrees awarded.	Achieved over prior academic year

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

Type of Resource Request	Summary of Request	New or Repeat Request	Amount of Request, \$	One-Time or Recurring Cost, \$	Contact's Name
Faculty	Additional adjunct faculty	New	See HR	Recurring	Dr. Jason Bowen
Classified Staff					
Technology					
Physical/Facilities					
Supplies	Miscellaneous laboratory equipment; spare/replacement components	New	10000.00	Recurring	Dr. Jason Bowen
Professional Development	Conferences including registration and travel	New	10000.00	Recurring	Dr. Jason Bowen
Other					

Please Select **Subject** area and **Program** Name or Code to get your data ----->

Select Subject
PHYS

Select Subject **again**
PHYS

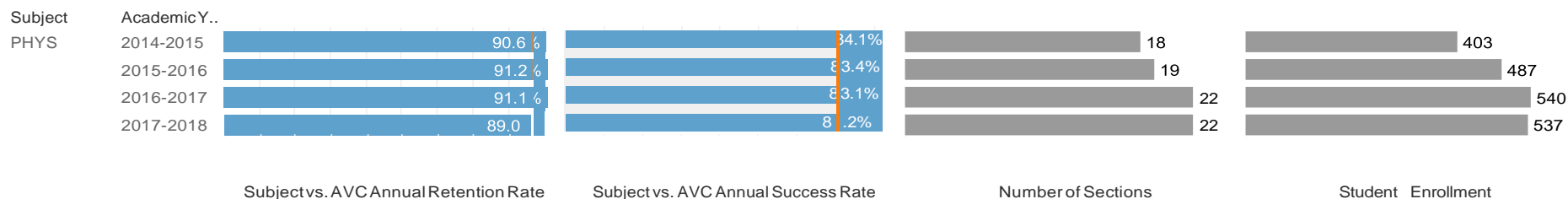
Select Major(s) for Program Awards
AS-T Physics

or Select Major Code for Awards
All

Academic Year
Multiple values



Retention, Success, Number of Sections, & Enrollment in **PHYS** (Total AVC rates are shown as |)



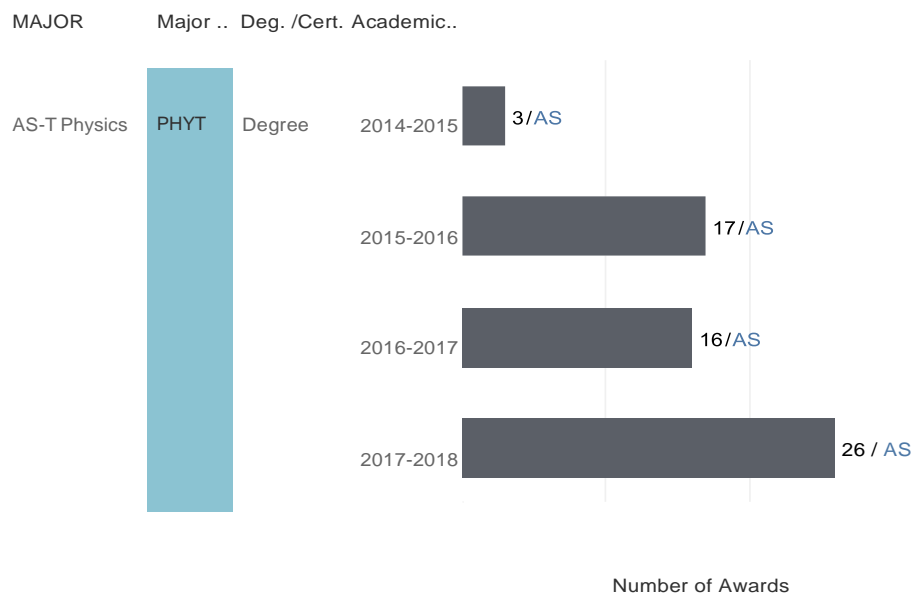
Enrollment and Number of Sections by **Modality** in **PHYS**

Instr. Met..	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	18	19	22	22
Enrollment	403	487	540	537

Enrollment and Number of Sections by **Location** in **PHYS**

Location	2014-2015	2015-2016	2016-2017	2017-2018
Number of Sections	18	19	22	22
Enrollment	403	487	540	537

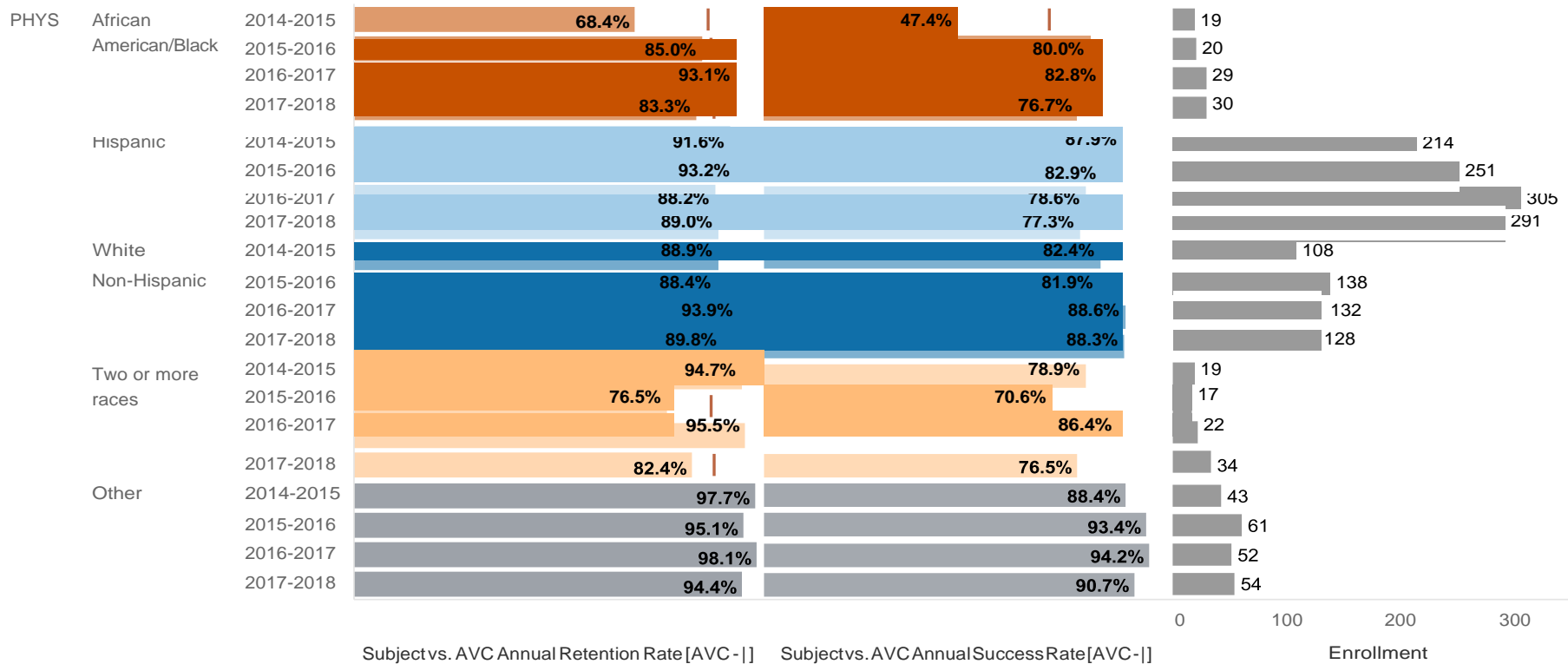
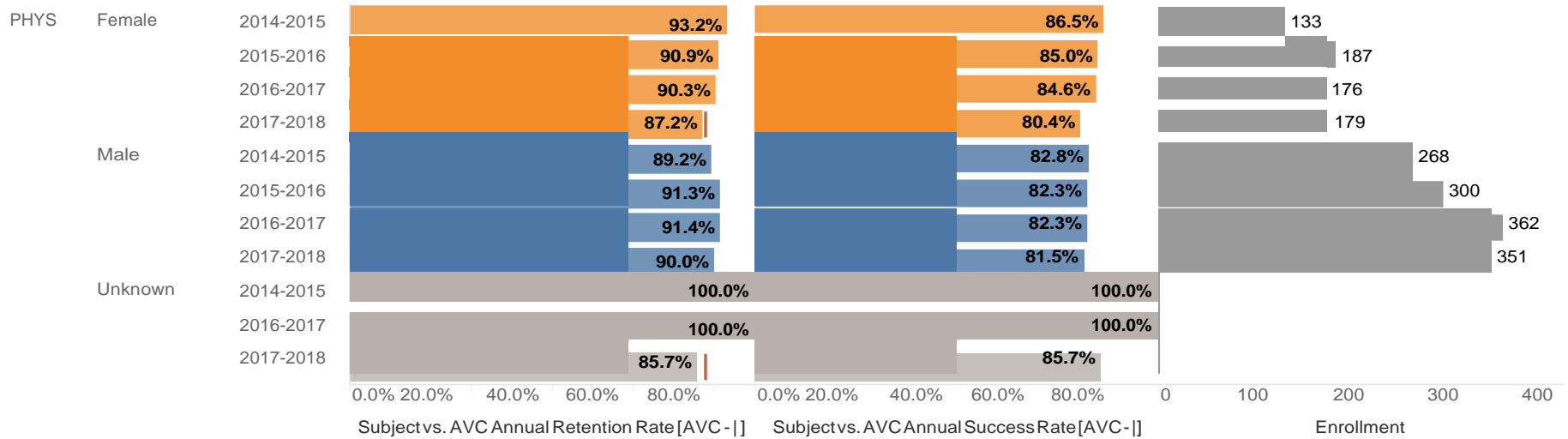
Number of Degrees/Certificates Awarded in **PHYT**



FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in **PHYS**

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct		0.2		
FT/Regular	2.3	2.5	2.5	2.5
FT/Overload	1.3	0.9	1.0	1.0
TOTAL FTEF	3.6	3.6	3.5	3.5
PT/FT		0.1		0.0
FTES	40.6	48.4	47.7	44.4
FTES/FTEF Ratio	11.3	13.4	13.8	12.8
WSCH/FTEF Ratio	338.0	403.3	412.8	383.8

Subject-Level Retention, Success and Enrollment by Gender & Race/Ethnicity as Compared to AVC's Retention and Success Rates (I)



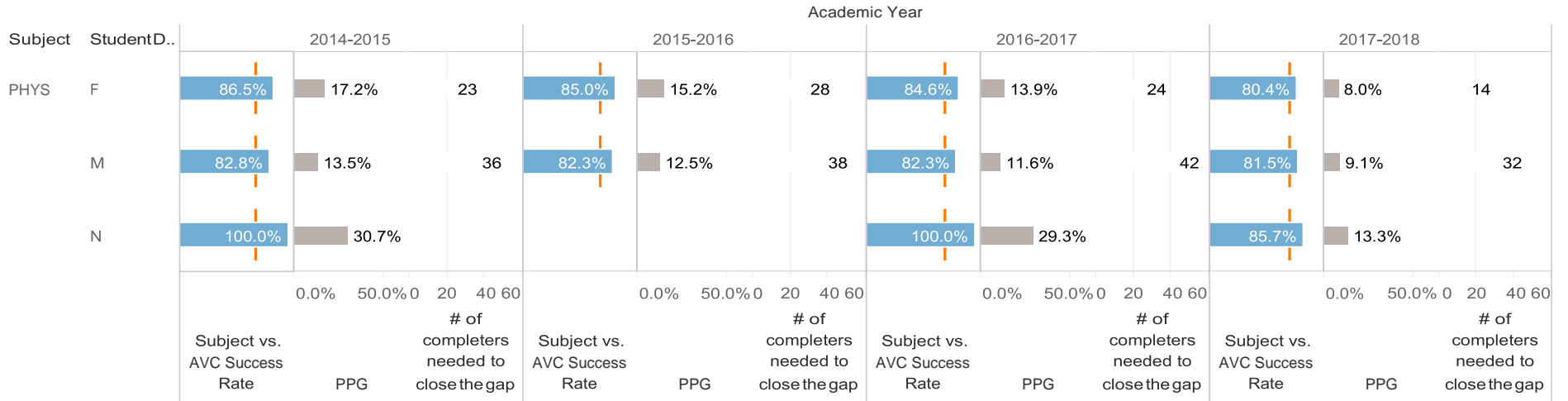
Subject
All

Academic Year
Multiple values

Select Demographics
Gender



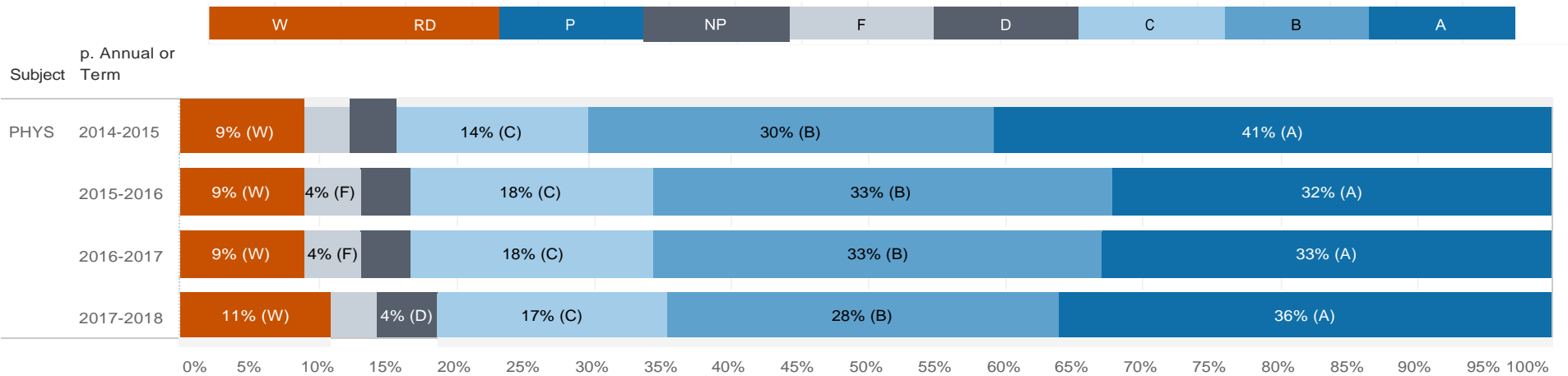
Disproportionate Impact as Percentage Point Gap (PPG) Subject Annual Success Rate vs. AVC Annual Success Rate (|)



Annual or Term Selector
Annual

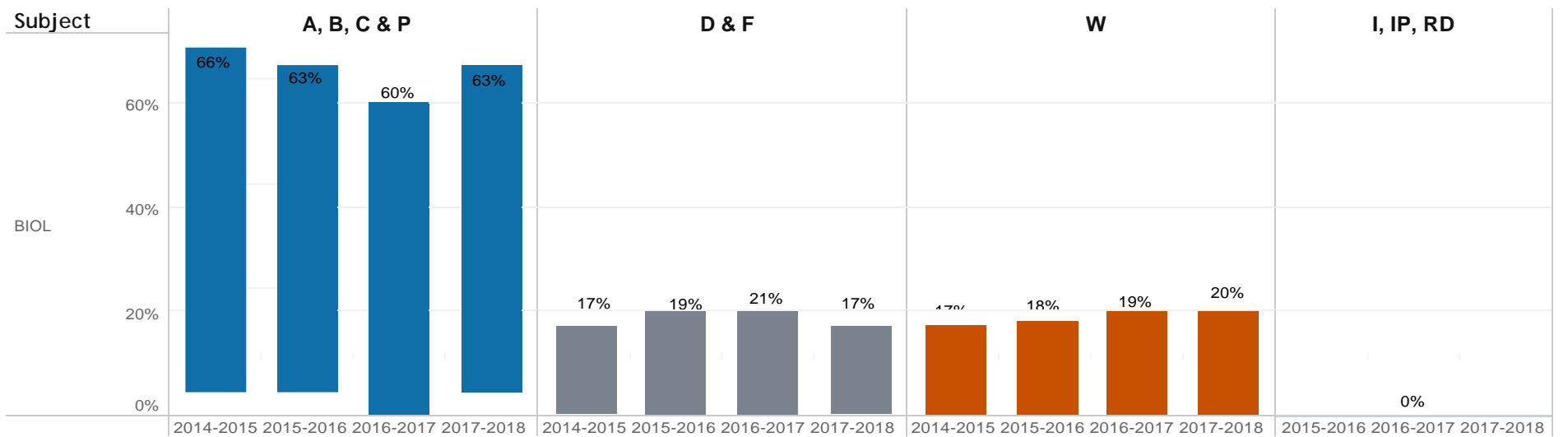
Term
All

Grade Distribution for PHYS



Subject
BIOL

Minor variation in numbers might occur due to rounding



Select Subject(s)
Multiple values

Location/Modality
None

Contract Type
Multiple values

Term
Multiple values

"Term" Filter can be applied to get FTEF (LHE/15) for Summers and Intersessions.

Full Time Equivalent Faculty (FTEF) by Contract Type (Part-Time, Full-Time, FT/Overload) and by Term (FTEF = LHE/15)

(The calculations exclude reassigned time)

	2014-2015						2015-2016						2016-2017						2017-2018					
	Fall 2014			Spring 2015			Fall 2015			Spring 2016			Fall 2016			Spring 2017			Fall 2017			Spring 2018		
	PT/A..	FT/R..	FT/O..	PT/A..	FT/R..	FT/O..	PT/A..	FT/R..	FT/O..	PT/A..	FT/R..	FT/O..	PT/A..	FT/R..	FT/O..	PT/A..	FT/R..	FT/O..	PT/A..	FT/R..	FT/O..	PT/A..	FT/R..	FT/O..
ABDY	1.1	1.1		1.1	1.1		1.1	1.1		1.1	1.1		1.1	1.1		1.1	1.1		1.1	1.1		1.1	1.1	
ACCT	2.7	1.1	0.2	3.1	1.0		3.0	1.0		3.5	1.0		3.1	1.0		2.1	2.0	0.3	1.9	1.8	0.5	2.1	1.7	0.3
ACRV	2.2	1.1		2.2	1.1		2.2	1.1		2.2	1.1		1.7	1.1		2.2	1.1	0.6	1.7	1.7		1.7	1.1	
AERO		2.7			2.7			2.7			2.7			2.7			2.7			2.7			2.7	
AFAB	2.3	1.1	0.8	1.5	1.3		3.1	0.3		6.3	1.1		5.2	2.2		7.1	1.3	0.5	8.5	1.6		9.6	3.1	1.0
AFMT														0.2			0.2			0.2			1.0	
AGRI	0.7	0.4	0.1	0.2	0.6	0.4	0.3	0.5		0.3	1.0	0.3	0.7	0.6	0.2	0.1	0.8		0.5	0.4	0.1	0.4	0.8	0.4
AJ	6.2	2.0	0.7	5.6	2.0	0.8	4.8	2.0	0.8	5.2	2.0	0.4	5.0	2.2	0.2	4.8	2.0	0.2	5.0	2.0	0.2	4.4	2.0	0.2
ANTH	0.6	1.0		0.6	0.9		0.8	0.6		1.2	0.9		1.6	0.7		1.8	0.9		1.6	0.7		1.6	0.9	
ART	3.5	4.6	0.3	3.1	4.5	0.3	3.5	4.6	0.3	3.2	4.9	0.3	4.4	4.1	0.3	3.6	4.7	0.7	3.5	4.6	0.3	4.0	4.9	0.7
ASTR		0.8	0.2		0.7			0.8	0.2		0.7			0.6	0.4		0.7			0.8	0.2		0.7	
ATH		0.7			0.7		0.5	0.3		0.7			0.7			0.5			0.7			0.7		
AUTO	1.7	1.2	0.1	1.7	1.3	0.3	1.4	1.1	0.4	1.7	1.1	0.3	1.9	1.0		1.7	1.2	0.5	1.1	2.2		1.1	2.4	
BIOL	7.1	12.5	2.9	6.6	11.9	2.4	8.5	12.6	2.2	7.0	12.5	2.1	8.0	12.0	3.1	7.2	12.3	2.8	7.3	13.7	2.9	7.8	13.3	2.5
BUS	5.0	2.0	0.4	5.6	2.0	0.6	3.8	2.8	0.8	3.8	2.8	1.0	3.8	2.6	1.0	4.2	2.0	1.2	4.6	2.0	0.8	4.0	2.0	1.2
CA	7.1	1.7		5.9	1.9	0.3	6.2	1.9	0.3	4.8	2.1	0.3	5.1	2.0	1.1	5.1	3.1	2.0	4.8	2.4	1.2	4.8	2.8	0.5
CFE	3.2	2.7	0.2	4.3	2.7	0.2	3.4	2.7	0.2	4.2	2.7	0.2	3.0	3.1	0.2	5.1	1.9		5.1	1.1		4.6	2.3	
CHEM	3.8	4.5	1.8	4.9	4.6	1.7	4.3	4.7	1.7	5.1	4.7	1.5	5.9	4.5	2.3	5.3	4.8	1.5	4.3	4.7	1.7	5.3	5.2	1.9
CHIN	0.3			0.3			0.3																0.3	
CIS	1.5	1.3	0.5	1.9	1.6		1.5	1.3	0.5	1.9	1.1	0.5	1.8	1.3	0.3	2.9	1.1	0.3	3.2	1.6	0.3	3.7	1.1	0.5
COMM	5.4	3.8		5.6	3.6		6.1	3.6	0.5	5.8	3.6		5.0	4.6		5.2	4.8	0.2	5.2	5.4	0.3	5.4	4.0	
CT	2.4			2.0			2.1			2.9			2.1			2.5			2.1			2.3		
DA	1.3	1.0		1.5	1.0		1.2	1.0	0.2	1.6	1.2		1.2	1.1		1.5	1.3		1.2	1.0		1.1	1.1	
DFST	2.5	1.3	0.7	3.8	1.0	0.2	3.5	1.2	0.3	4.5	1.2	0.4	4.1	0.8	0.6	4.2	1.0	0.4	2.3	2.4	0.3	4.2	2.1	0.5
DM	5.3	2.1	0.1	4.5	2.1	0.2	4.8	2.1		4.1	2.1		4.2	2.1	0.2	3.8	2.1		2.8	2.1		3.4	2.1	
DRFT	0.7			0.6			0.7			0.2			0.7			0.6			0.7			0.6		
ECON	1.4	1.0		1.4	1.0	0.2	1.2	1.2	0.2	1.0	1.0	0.2	1.4	1.0		1.0	1.0		1.4	1.1	0.2	1.0	1.0	
ED	0.8			0.4			0.8			0.6			0.8			0.6			0.4			0.4		
ELEC	1.9	1.1		1.6	1.1		1.9	0.8		1.2	0.8		1.6	0.9		1.2	1.1		0.9	1.2	0.3	1.2	1.0	0.7
ELTE	0.9	0.9	0.3	0.8	1.3		1.7	0.9		1.6			0.9	0.7		1.6	0.6		1.9	0.9		1.6	0.9	
EMT		1.1			1.1			1.1			1.1			1.1			1.1			1.1			1.1	
ENGL	8.7	16.3	2.3	11.0	14.0	2.1	8.8	16.2	2.7	10.8	16.6	2.9	11.2	15.6	3.3	10.6	15.6	2.4	9.7	16.5	2.9	9.0	17.3	1.3

Select Subject(s)
Multiple values

Contract Type
Multiple values

Term
Multiple values

Course Number
All

Location/Modality
None



**Annualized FTEF by Contract Type (Part-Time, Full-Time, FT/Overload, Total) in Major Terms.
[(Fall LHE + Spring LHE)/30]**

	2013-2014				2014-2015				2015-2016				2016-2017				2017-2018			
	PT/Adj	FT/Re..	FT/Ov..	Total	PT/Adj	FT/Re..	FT/Ov..	Total	PT/Adj	FT/Re..	FT/Ov..	Total	PT/Adj	FT/Re..	FT/Ov..	Total	PT/Adj	FT/Re..	FT/Ov..	Total
ABDY	1.1	1.1		2.2	1.1	1.1		2.2	1.1	1.1		2.2	1.1	1.1		2.2	1.1	1.1		2.2
ACCT	2.7	1.2	0.2	4.0	2.9	1.0	0.1	4.0	3.2	1.0		4.2	2.6	1.5	0.1	4.2	2.0	1.8	0.4	4.2
ACRV	1.9	1.1		3.0	2.2	1.1		3.3	2.2	1.1		3.3	1.9	1.1	0.3	3.3	1.7	1.4		3.0
AERO		2.7		2.7		2.7		2.7		2.7		2.7		2.7		2.7		2.7		2.7
AFAB	2.1	0.1		2.3	1.9	1.2	0.4	3.5	4.7	0.7		5.3	6.1	1.8	0.3	8.2	9.1	2.4	0.5	11.9
AFMT													0.1			0.1	0.6			0.6
AGRI	0.3	0.7	0.1	1.0	0.4	0.5	0.2	1.2	0.3	0.8	0.1	1.2	0.4	0.7	0.1	1.2	0.4	0.6	0.3	1.3
AJ	6.7	2.0	0.5	9.2	5.9	2.0	0.8	8.7	5.0	2.0	0.6	7.6	4.9	2.1	0.2	7.2	4.7	2.0	0.2	6.9
ANTH	0.6	1.0		1.6	0.6	0.9		1.5	1.0	0.7		1.7	1.7	0.8		2.5	1.6	0.8		2.4
ART	3.7	4.6	0.4	8.7	3.3	4.6	0.3	8.2	3.3	4.7	0.3	8.4	4.0	4.4	0.5	8.9	3.7	4.8	0.5	9.0
ASTR		0.7	0.2	0.9		0.8	0.1	0.9		0.8	0.1	0.9		0.7	0.2	0.9		0.8	0.1	0.9
ATH		0.5		0.5		0.7		0.7	0.6	0.1		0.7	0.6			0.6	0.7			0.7
AUTO	1.2	1.1	0.4	2.7	1.7	1.3	0.2	3.2	1.6	1.1	0.3	3.0	1.8	1.1	0.3	3.2	1.1	2.3		3.4
BIOL	5.2	13.1	2.9	21.2	6.8	12.2	2.7	21.8	7.8	12.6	2.2	22.5	7.6	12.2	3.0	22.7	7.6	13.5	2.7	23.8
BUS	5.5	1.8	0.5	7.8	5.3	2.0	0.5	7.8	3.8	2.8	0.9	7.5	4.0	2.3	1.1	7.4	4.3	2.0	1.0	7.3
CA	7.0	1.6	0.3	8.9	6.5	1.8	0.1	8.4	5.5	2.0	0.3	7.8	5.1	2.6	1.6	9.2	4.8	2.6	0.9	8.3
CFE	3.4	3.3	0.2	6.9	3.8	2.7	0.2	6.6	3.8	2.7	0.2	6.7	4.1	2.5	0.1	6.7	4.9	1.7		6.6
CHEM	4.1	4.5	1.5	10.0	4.3	4.5	1.7	10.6	4.7	4.7	1.6	11.0	5.6	4.6	1.9	12.1	4.8	4.9	1.8	11.6
CHIN	0.3			0.3	0.3			0.3	0.2			0.2					0.2			0.2
CIS	1.7	1.1	0.5	3.3	1.7	1.5	0.3	3.4	1.7	1.2	0.5	3.4	2.3	1.2	0.3	3.8	3.4	1.3	0.4	5.1
COMM	6.3	3.7		10.0	5.5	3.7		9.2	6.0	3.6	0.2	9.8	5.1	4.7	0.1	9.9	5.3	4.7	0.1	10.1
CT	1.9			1.9	2.2			2.2	2.5			2.5	2.3			2.3	2.2			2.2
DA	1.5	1.1	0.1	2.7	1.4	1.0		2.4	1.4	1.1	0.1	2.6	1.3	1.2		2.6	1.1	1.1		2.2
DFST	2.4	1.7	0.6	4.7	3.1	1.2	0.4	4.7	4.0	1.2	0.3	5.5	4.2	0.9	0.5	5.6	3.2	2.2	0.4	5.9
DM	5.3	2.1	0.2	7.7	4.9	2.1	0.2	7.2	4.4	2.1		6.5	4.0	2.1	0.1	6.2	3.1	2.1		5.2
DRFT	0.6			0.6	0.6			0.6	0.5			0.5	0.6			0.6	0.6			0.6
ECON	2.3			2.3	1.4	1.0	0.1	2.5	1.1	1.1	0.2	2.4	1.2	1.0		2.2	1.2	1.1	0.1	2.4
ED	0.7			0.7	0.6			0.6	0.7			0.7	0.7			0.7	0.4			0.4
ELEC	1.5	1.0		2.5	1.8	1.1		2.9	1.6	0.8		2.4	1.4	1.0		2.4	1.1	1.1	0.5	2.7
ELTE	0.8	1.3		2.1	0.9	1.1	0.1	2.1	1.6	0.5		2.1	1.3	0.6		1.9	1.8	0.9		2.6
EMT		1.1		1.1		1.1		1.1		1.1		1.1		1.1		1.1		1.1		1.1
ENGL	8.5	15.2	1.9	25.6	9.8	15.2	2.2	27.2	9.8	16.4	2.8	29.0	10.9	15.6	2.9	29.4	9.4	16.9	2.1	28.3
ENGR	2.1	1.0		3.1	2.8	0.4		3.2	2.1	1.1	0.2	3.4	1.2	1.3	0.2	2.7	1.1	1.4	0.2	2.7
ERSC		0.4		0.4		0.3	0.1	0.4		0.3	0.1	0.4		0.2	0.2	0.4		0.8		0.8

Select Subject **again**

PHYS

FTEF, FTES, FTES/FTEF, & WSCH/FTEF by Major Term
AVC vs. Subject



FTEF by Contract Type, Part-time/Full-time Ratio, FTES, FTES/FTEF in **PHYS**

	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct		0.2		
FT/Regular	2.3	2.5	2.5	2.5
FT/Overload	1.3	0.9	1.0	1.0
TOTAL FTEF	3.6	3.6	3.5	3.5
PT/FT		0.1		0.0
FTES	40.6	48.4	47.7	44.4
FTES/FTEF Ratio	11.3	13.4	13.8	12.8
WSCH/FTEF Ratio	338.0	403.3	412.8	383.8

AVC Total

Measure	Fall 2014	Fall 2015	Fall 2016	Fall 2017
PT/Adjunct	182.0	185.0	196.8	191.5
FT/Regular	154.7	153.5	147.9	161.1
FT/Overload	27.5	26.5	30.0	27.3
TOTAL FTEF	364.3	365.0	374.7	380.6
PT/FT	1.2	1.2		
FTES	5,161.5	5,035.8	4,982.4	4,947.2
FTES/FTEF Ratio	14.2	13.8	13.3	13.0
WSCH/FTEF Ratio	425.1	413.9	398.9	390.0

Academic Year
Multiple values

Breakby..
None

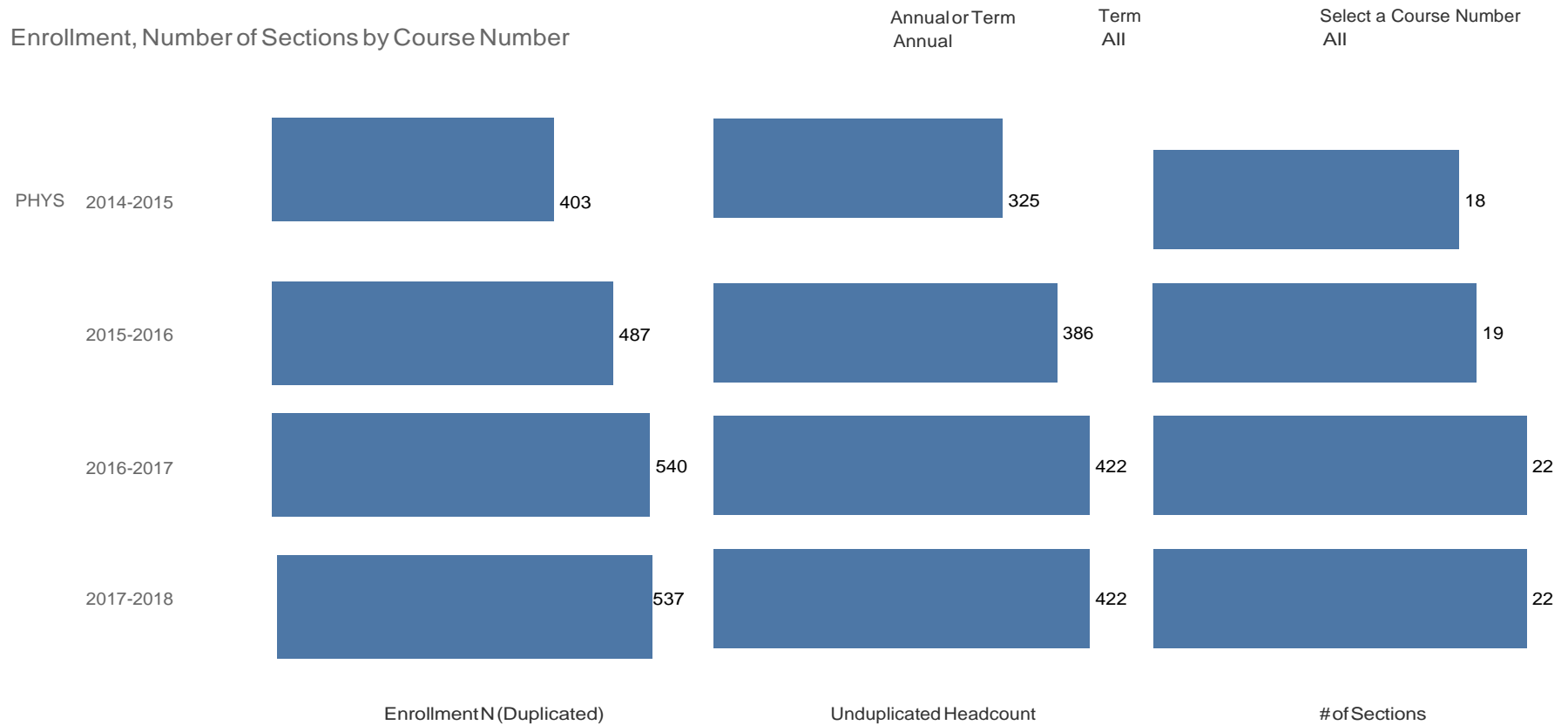
Subject
PHYS



Success (and Enrollment) Numbers in Subject(s) **PHYS** by Academic Year (Hover over the numbers for Retention)

	2014-2015	2015-2016	2016-2017	2017-2018	Grand Total
PHYS	84.1% (403)	83.4% (487)	83.1% (540)	81.2% (537)	82.9% (1,967)
Grand Total	84.1% (403)	83.4% (487)	83.1% (540)	81.2% (537)	82.9% (1,967)

Enrollment, Number of Sections by Course Number



Success and Retention for Comprehensive Program Review



1. Select your view by **Subject, Division, or Department**.
2. Depending on your selection, choose your **Subject(s), Division or Department** among the filters.
3. To break by *Modality, Location or Time*, go to the **Break by..** to make your selection.

Subject/Division/Dept View Sele..
 Division
 Department
 Subject
 Break by..
 Academic Year
Division
All
All

None
All

Subject/Div..	Academic Year	Break by ..					
Arts & Humanities	2014-2015	73.5%	86.4%	15,068	7,775	715	
	2015-2016	74.1%	87.0%	14,749	7,676	732	
	2016-2017	75.2%	88.1%	14,138	7,382	749	
	2017-2018	76.1%	88.2%	14,175	7,501	761	
Health & Safety Sciences	2014-2015	77.3%	90.1%	10,714	5,850	468	
	2015-2016	77.7%	90.1%	9,144	5,199	452	
	2016-2017	78.1%	90.9%	8,729	4,680	453	
	2017-2018	80.3%	91.4%	8,639	4,687	469	
Math, Science & Engineering	2014-2015	62.6%	83.0%	21,659	11,337	684	
	2015-2016	63.1%	84.0%	23,133	11,191	835	
	2016-2017	65.8%	84.8%	23,816	10,572	1,017	
	2017-2018	68.3%	85.3%	25,761	11,013	1,116	
Rhetoric & Literacy	2014-2015	70.5%	87.7%	12,564	8,199	480	
	2015-2016	69.3%	88.8%	13,368	8,464	520	
	2016-2017	68.0%	88.1%	13,894	8,619	558	
	2017-2018	71.0%	88.8%	13,316	8,112	519	
Social & Behavioral Sciences	2014-2015	67.1%	86.1%	19,640	10,073	570	
	2015-2016	69.5%	87.2%	18,528	9,629	551	
	2016-2017	70.4%	88.3%	18,351	9,497	579	
	2017-2018	71.3%	87.9%	18,622	9,619	584	
Technical Education	2014-2015	72.2%	85.1%	8,990	4,734	450	
	2015-2016	73.9%	86.3%	8,735	4,547	451	
	2016-2017	74.4%	86.9%	8,473	4,247	471	
	2017-2018	75.2%	86.7%	8,914	4,409	516	



2018-2019 Program Review Report

Division/Area Name: Mathematics, Science & Engineering / Water Treatment	For Years: 2018-2019
Name of person leading this review: Zia Nisani	
Names of all participants in this review:	

Part 1. Program Overview:

<p><i>1.1. Briefly describe how the program contributes to the district <u>mission</u>:</i></p> <p>The water treatment courses help prepare students for the various grade-level water treatment and/or distribution examinations administered by the California State Water Resources Control Board. Specific courses may be used as secondary courses required for specialized training or for students who wish to enter or who are already employed in the water treatment and water distribution operator fields, as defined by the California State Water Resources Control Board. This is in line with the district’s mission of offering workforce programs, job preparation courses (non-degree applicable) and a variety of services that contribute to the educational and economic well-being of the community.</p>	
<p><i>1.2. State briefly program highlights and accomplishments:</i></p> <p><i>(1) The water treatment and distribution courses offer technical specific education and training in the learning of the operations of these fields. (2) The certification gained upon completion can be utilized as required education prior to testing for a California State Water Resources Control Board treatment and distribution certification exams. (3) Certificate holders open themselves up for potential employment in the fields of water treatment and distribution, thus increasing the available qualified candidates for water agency employment vacancies.</i></p>	
<p><i>1.3. Check each <u>Institutional Learning Outcome (ILO)</u> supported by the program.</i></p>	
<input type="checkbox"/> Communication	<input type="checkbox"/> Demonstrates analytical reading and writing skills including research, quantitative and qualitative evaluation and synthesis. <input type="checkbox"/> Demonstrates listening and speaking skills that result in focused and coherent communications
<input checked="" type="checkbox"/> Creative, Critical, and Analytical Thinking	<input type="checkbox"/> Uses intellectual curiosity, judgment and analytical decision-making in the acquisition, integration and application of knowledge and skills. <input checked="" type="checkbox"/> Solves problems utilizing technology, quantitative and qualitative information and mathematical concepts.
<input type="checkbox"/> Community/Global Consciousness	<input type="checkbox"/> Understands and applies personal concepts of integrity, ethics, self-esteem, lifelong learning, while contributing to the well-being of society and the environment. <input type="checkbox"/> Demonstrates an awareness and respect of the values of diversity, complexity, aesthetics and varied cultural expressions.
<input checked="" type="checkbox"/> Career and Specialized	<input checked="" type="checkbox"/> Demonstrates knowledge, skills and abilities related to student educational goals, including career, transfer and personal

Knowledge	enrichment.
1.4. Check each <u>Educational Master Plan (EMP)/Strategic Plan Goal</u> supported by the program.	
<input type="checkbox"/> Goal 1*: Commitment to strengthening institutional effectiveness measures and practices.	
<input type="checkbox"/> Goal 2*: Increase efficient and effective use of resources: Technology; Facilities; Human Resources; Business Services.	
<input type="checkbox"/> Goal 3: Focus on utilizing proven instructional strategies that will foster transferable intellectual skills.	
<input type="checkbox"/> Goal 4*: Advance more students to college-level coursework-Develop and implement effective placement tools.	
<input checked="" type="checkbox"/> Goal 5: Align instructional programs to the skills identified by the labor market.	

*Indicates College-Wide Priorities for 2018-2021 as of fall, 2018.

Part 2.A. Please provide the results of any internal and external environmental scan information you have gathered related to the program e.g. surveys, interviews, focus groups, advisory groups, licensure exam scores, job placement, State mandates, etc.:

We can determine the number of students that have completed a class and compare it to the published state list of certified treatment operators and or certified distribution operators. The data does not provide the number of students that may have taken the exam and failed. Earliest data is from the Fall of 2018. The earliest they could have taken a State exam and the results to be published was late spring of 2019. Data may be skewed due to students taking the class for reasons such as preparing for a higher grade certification, or gathering Continuing education hours to renew a certification. In either case they already are certified operators. Another item that may skew the data is the home city of the operator on the published list. The name and home city are the only two points of information for me to determine if they where a student. Same first and last names, or if the student has moved out of the area may be other data issues. The following is a list by semester of the number of students that successfully completed the course and currently are certified operators. Distribution: Fall 2018 Distribution, 9 students passed, 6 are certified, Spring 2018, 5 passed, 1 is certified, Fall 2017, 12 passed, 10 are certified, Spring 2017, 7 passed, 1 is certified, Fall of 2016, 9 passed, 6 are certified. The five semesters of data show 42 students successfully completed the class, 24 of those currently hold a water distribution certifications, or 57%

Part 2.B. Analyze the program review data (please see the program review data retrieval instructions and attach your program review data page with any other supporting documents), the above environmental scan information, and anything else related to your area to identify program strengths, weaknesses, opportunities, & threats (SWOT): The program offers five course sections taught by two adjunct instructors who are employees of local water agencies. The total enrollment per year varies between 60 to 100 students. The purpose of those courses is to prepare students for a state licensure exam and the variation of enrollment is a function of the local need for employees. In reviewing student longitudinal data (academic years 2014-15 to 2017-18) we observe that the overall retention rate has remained constant at over 80%. However, there has been a decline in success rates from about 65% (on average) in 2014-15 and 2015-16, to 44% in 2017-18 before it bounced back again up to 52% in 2017-18. *(Note to instructors: We need a plan of what we will do to improve that).*

Strengths	By taking only three classes the students can prepare for the various grade-level water treatment and/or distribution examinations administered by the California State Water Resources Control Board. Certifications are required by the Safe Drinking water Act for anyone that operates distribution and/or treatment systems, that may affect water quality. Generally this applied to every field employee other that entry level positions.
Weaknesses	The program is not well advertised and it can benefit from a FT faculty supervision.
Opportunities	Hiring a FT chemistry instructor that can teach and supervise this program.

Threats	Any program taught with only adjuncts cannot really grow. At the same time, enrollment might not justify a full-time position.
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Part 2.C. Review and comment on progress towards SLO/PLO/OO Action Plans:

During the spring semester of 2019 the Water Distribution class had 13 SLO's listed. The overall success rate was 75% . The success rate ranged from a low of 57% to a high of 89%. Five were below 70%, eight were above. This data was taken from the four semester test, that are comprised of 35 multiple choice questions and 10 questions that require calculations. The comprehensive final was not included in the data.

The Applied math class had 10 SLO's Listed. The overall success rate was 79%. The success rate ranged from 75% to 87% It ranged. This data was taken from the three in class tests. The comprehensive final test was not included in the data.

We may be able to increase our effectiveness by having a designated tutor in the learning center that has direct contact with instructors. Referring students to the learning center in the past has had mixed results for students seeking assistance. Then early referring students to the learning center for assistance. Other choices may be by adding a weekly study group or tutoring session on campus.

Part 2.D. Review and comment on progress towards past program review goals: (N/A)

Part 3. Based on Part 2 above, please list program/area goals for 2020-2021:

<i>Program/Area Goal #</i>	<i>Goal supports which ILO/PLO/SLO/OO?</i>	<i>Description of Goal</i>	<i>Steps to be taken to achieve goal?</i>
Capture community interest	PLO/SLO	Educate public/schools	Participate in community expo's.
Capture water agency interest	PLO/SLO	Coordinate training with water agency's	Conduct meetings and present course information
Outreach	PLO/SLO	Raise awareness benefits of water jobs/education	Promotional brochures, attend community functions, coordinate with local LEAs.

Part 4. Resource Requests that Support Program Needs (Based on above analyses and listed in priority order):

<i>Type of Resource Request</i>	<i>Summary of Request</i>	<i>New or Repeat Request</i>	<i>Amount of Request, \$</i>	<i>One-Time or Recurring Cost, \$</i>	<i>Contact's Name</i>
Faculty					
Classified Staff					
Technology					
Physical/Facilities					
Supplies					
Professional Development					
Other					