2022-23 Program Review Template

<u>Directions for Lead Writers</u>: Please use this template to complete your Unit's Program Review for this cycle. Instructions for submitting your completed template at the end of the spring semester will be provided in a few weeks. Click <u>here</u> to view our Glossary of Terms.

Other Resources:

Program Review Handbook
Acronym Dictionary
Resource Link Library

<u>DEI Discussions</u>: as part of your reflection with your unit, a workgroup has developed a Diversity, Equity, Inclusion, and Accessibility Discussion Guide. Please use this in your unit-level discussions as we move toward becoming more diverse, equitable, inclusive, and accessible through intentional and ongoing campus-wide reflections and revisions of policies and practices. View the guide here. Have reflections or feedback to share? Click here.

| Program Information & Executive Summary | | |
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| Prompt | Guidance | Program Response |
| Describe the successes and challenges your unit has faced since the last comprehensive review. | | There have been two large challenges: COVID-19 and multiple changes in leadership at the Dean level. As a result, this has impacted the what, how, and when employees come to the office. Examples include: Policies & Expectations: employees, especially those hired within the last 3-4 years, are not familiar with what they are to report (example: leaves), nor who they are to report to (some email only department chairs and not the Dean when reporting leaves). Many things became more "flexible" during the pandemic, coupled with several changes in leadership (4 Deans, including myself since 2020) without clear nor consistent communication, if at all, to employees. Modalities: All classes were converted to remote/web starting in Spring 2020, and while many (especially lab- |
| | | based) have transitioned back to face-to-face, many remain as some form of online/hybrid. This has brought challenges, |

questions, and changes all around. There are faculty members that have never set foot in the Dean's office, nor have had any interaction with us. This has also resulted in lowered attendance at school meetings and less involvement/service overall to the college.

- Service (of the office): Before the pandemic one of the largest functions of the office was to help students, including the petition process. Since that process has transitioned to JIRA (online) there are significantly fewer students seeking help. The switch to online modality and the difficult transition for many back to face-to-face courses also plays a role.
- Overall community: Community and individuals' interactions with each other has suffered. Some faculty have left over the last three years, where others have joined (or joined right before the start of the pandemic). Dean leadership changes have left employees feeling disjointed and apprehensive, a lack of consistency has affected trust and community. Many employees do not visit the office, further adding to the disconnect. All this coupled with the pandemic and state legislature (AB705/1705) has made it ever so apparent that rebuilding trust and community is crucial.

Two main areas of success are resilience and enrollment.

While we could say that enrollment has also been a challenge (adding "less classes, less students, less faculty" to all of the factors listed above) the School still has healthy enrollment. Top majors at the College continue to be Engineering and Biology (Allied Health). Throughout the remote teaching timeline of the COVID-19 pandemic we continued to offer classes for students: Chemistry labs were the first to be held on campus and Biology followed shortly after. Additionally, we continued to offer several courses, like Microbiology, that many nearby colleges did not. As a result, the School played a vital role in the "reopening" of Mesa College with safety our main priority. There has been a reduction in sections/courses over the last several years with some courses affected more than others, but we haven't experienced major struggles, and have started to see our

| | | enrollment trends back towards the positive. |
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| | | Resilience. Our employees are tired- affected by multiple factors over the last several years, a pandemic (which resulted in continual educational challenges like modality changes, academic integrity, impact to students (life, retention, motivation, health, academic success), all while, as individuals, we were living through a pandemic filled with uncertainty as well as physical & mental health concerns, from isolation and a lack of community. District changes, campus changes and climate upon returning (as well as during remote instruction), multiple changes in leadership at the School level, and curriculum concerns (articulation concerns over online modality, state legislation) also have had an impact. I'm proud that we are still here, with employees that dedicate their time and energy to students. |
| If applicable, describe any major curricular or service changes your unit has engaged in and the impact of those changes since the last comprehensive review. | Optional | While many lab-based science courses have returned to face-to-face instruction since the COVID-19 pandemic (and many chemistry and biology classes were the first to return at the campus) there are still multiple courses that have maintained an online modality. Math courses have had a slower return to on campus. A decline in enrollment was exacerbated by the pandemic and several disciplines and programs have not fully recovered- there was also a loss of instructors who retired or left during this time. Further AB705, has exacerbated enrollment with the elimination of many courses and this will continue with the cessation of Math 92 and 96. The overall impact includes: • Less students and instructors on campus with many working and attending meetings remotely • Less familiarity with campus policies and services (see above) |
| If applicable, describe the impact of any new resources (human, fiscal, etc.) on the unit | Optional | Less community and connection HEERF funds have been extremely valuable in the ability to maintain course offerings and hands-on lab instruction during the pandemic and aid in student success and retention since the return to the |

| and/or action plan implementation. Please confirm that the | Select One | classroom. Lab equipment, lab supplies including those for student take-home kits, laptops, microscopes and access to field trips are a few examples of purchased made with this resources. |
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| department has reviewed the Course Learning Outcomes listed in CurricuNet for each course and verify accuracy. | | □ Reviewed and accurate □ Reviewed not accurate, update in progress □ Reviewed not accurate, need support N/A for administrative level |
| Data Reflection | | |
| Prompt | Guidance | Program Response |
| Describe the trends you see in your program/service area's data. | Instructional Data you may consider: enrollment trends, course & program learning outcomes, Institutional Learning Outcomes, course success and retention rates, degree completion, transfer, employment, labor market analysis, other data relevant to your unit's work Service/Admin Area Data you may consider - service usage, service access, demand for services, student service/administrative unit outcomes, types of services offered and used, headcount of services usage, trends in reason for service use, other data relevant to your unit's work | Enrollment has been declining since before the COVID-19 pandemic, yet has become more stable recently with higher fill rates observed, though the number of course offerings remain reduced. Fall 2020 had 491 sections, an enrollment of 11,132 students, and a fill rate of 69.6% where Spring 2023 had 371 sections, an enrollment of 9,593 students, and a fill rate of 82.2%. Interestingly enrollment was at the highest for Spring 21, with 11,524 students and then decreased in Fall 21 to 9,071 students, with a further drop in 22 (Spring 8,221 and fall 8,615). The myriad of effects to our student population including the pandemic and economy as well as access to learning resources, support services, course modalities, and student community play a large role in this. An analysis of awards granted within the school has seen a couple changes of note. In the 2018-19 academic year, the top 5 awards within the School were 1. Biology: Allied Health (65), 2. Engineering (35), 3. Biology: Transfer (30), 4. Mathematics for Transfer (24), and 5. Physics (21). In the 2021-22 academic year, Biology: Allied Health remains #1 (75), #2 was Biology: Transfer (63), 3. Liberal Arts & Studies: Mathematics & Pre-engineering (29), and 4. Mathematics for Transfer (21). It is wonderful that there was an increase in the number of Biology awards, yet not so great that the number of Engineering awards went from 35 (and the 2 nd highest) to only 9 (and not in the top 5 award categories)- also several of those awards were |

| | | "replaced" with LAS- Pre-engineering awards. Further, Biology went from the 2 nd highest academic plan in the college in 2018-19 *excluding the high amount of undecided/unreported* to #1 in 2021-22, while Engineering remained at #5. |
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| Describe any equity gaps you see in these data. Are there differences and/or patterns observed by demographics (e.g. race/ethnicity, gender, age, etc.)? | Equity gaps refer to disparities in educational outcomes and student success metrics across race/ethnicity, socioeconomic status, gender, and other demographic traits and intersectionalities. | There was a reduction in the equity gap for both number of awards given to females (13.9% disproportionate gap in 2018-1 to 2.3% gap in 2021-22) and African American students (3.4% gap to 2.7% gap). It's important to note these gaps still remain. Additionally, there is still a significant equity gap for number of awards granted to Latinx students (5.7% in 2021-22). |
| Describe the discussion(s) that took place about the unit's learning outcomes assessment data. | facilitate a department wide discussion on learning | |
| Practice Reflection | | |
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| Describe current practices your unit has engaged in that you believe impact the above data trends and equity gaps. | Items to consider: new actions specifically focused on issues of equity, major curricular changes, professional learning, policy or process changes, data-informed unit dialogue, community outreach. | There are multiple initiatives currently in progress that are aimed at decreasing equity gaps, specifically in low-income and LatinX student populations, as well as increasing overall student success. These include: • HSI E3 grant • Peer mentoring: This has shown great success in our STEM major courses where students work with peers that have recently completed the course in active group work and discussion. • Interdisciplinary Curriculum workgroup: Goals include: reducing overall units for students (engineering) and analysis of student "maps" and course sequencing between disciplines (faculty work to discuss what prerequisite material from one course/discipline is needed for subsequent courses/disciplines and how to create an improved and seamless transition for students) |

Path to STEM success: Fall and Intersession
orientation events for both new and current students
includes industry panels, access to our STEM
counselor, content workshops and refreshers with
faculty and helpful campus information; Registration
workshops held in mid-May where students could
ask questions to faculty and counselors about
courses/programs for Summer and Fall; Noche de la
Familia: planned Summer orientation event for family
members of STEM students to introduce them to
STEM "culture" and provide access to resources and
information and a space to ask questions.

NSF grant

 Provides field experiences for students outside the classroom with an aim at increasing students' STEM identity. This includes a field trip in Biol210B Introduction to the Biological Sciences II and a summer 10-day field trip for students interested in geological sciences.

I3 grant

 Faculty from Biology, Business and English worked together to develop a citizen science project for students; Students from any major were invited to apply and the first cohort started in Spring 2023.
 Students participated in a 10-week project that utilized multiple skillsets and perspectives as applicable to a "real-world" job scenario. The workshop culminated with student presentations.

MESA program

We will be receiving funds to start a MESA
 (Mathematics, Engineering, Science Achievement)
 program to support students majoring in calculus based programs. The funding will support "academic
 excellence workshops" which are structured almost
 identical to our current Peer Mentoring program and
 extra support for mathematics courses due to
 AB1705. Students will also be placed in cohorts

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| | | which will aid in increasing a sense of belonging and community as well as group support for their classes. A MESA center will also be an established physical space where students can go- not only for social and academic support, but have access to services like counseling, models and technology. The program will involve several departments across campus, including Student Services, Puente, Counseling, and Institutional Effectiveness. |
| What other factors (internal or external) might also impact the | Items to consider: legislative changes, fiscal changes, staffing changes, recruitment, hiring, and | The COVID pandemic, and AB705/1705 have definitely impacted student success and equity. |
| above data trends and equity gaps? | retention practices. | The pandemic had a great impact on education, as not only were individuals suffering in this scary and unknown time (and many students to a greater effect in regards to job and housing insecurity), but also adjusting to a sudden switch in learning modality. While the faculty in the school provided online/remote classes for students (Mesa being the only college in the region for some lab-based courses) this modality had a disproportionate impact on some students, mainly underrepresented groups have been shown to have lower success rates without an in-person component. Further, in online courses faculty were concerned about academic integrity so may have implemented examination and assignment structures that also had a disproportionate effect on students. While laptops were provided to students, technology and internet access still remained a barrier. Finally, since the return to face-to-face courses, faculty have reported lower levels of preparedness in students – both in mathematics skills and content from an earlier course in a sequential course series (ex. Chem152 to Chem200). |
| | | AB705/1705: While the (hopefully) positive effects of this legislature are yet to be seen in mathematics (below transfer-level courses, Math 92 and 96 will no longer be offered starting Summer 2023) in terms of more equitable placement for students, there are many |
| | | concerns on the impact to students moving forward, especially in the STEM programs. As described above, faculty are noticing lower level of math preparedness in science courses. As intermediate algebra |

| (Math 96) was a prerequisite for biology and chemistry courses, thus |
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| faculty have concerns about the impact of the loss of these courses. |
| Additionally, AB1705 will result in the (potential) loss of the transfer- |
| level prerequisite courses, trigonometry and pre-calculus, for |
| calculus courses for both non-STEM (mainly business) and STEM |
| programs. The legislation is focused on questioning whether there is |
| a beneficial impact of these courses on a student's overall success |
| IN calculus, but fails to acknowledge the content in those courses is |
| also necessary for science courses- ironic as the <i>calculus course</i> |
| requirement (which the state is using as their foundational rationale |
| for the legislation) is there for biology, chemistry, physics and |
| engineering majors, not just math majors (and Biology and |
| Engineering are the top majors at Mesa College). |
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Unit Goals and Action Plans

| Prompt | Guidance | Program Response |
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| Unit Goals | Goals should connect to Data and Practice Reflections. Goals should be Specific, Measurable, Attainable, Relevant, and Time- bound. | Goal 1: To provide a consistent, inclusive and safe "human-first" culture and environment that prioritizes (and reestablishes) community and team work. Goal 2: To center student success & equity through interdisciplinary projects, professional learning, and opportunities with both internal and external partners. |
| Mesa2030 Roadmap Strategic Objective (SO) Alignment | Review Mesa2030 and the Roadmap to Mesa2030, only link to SO's that your goal clearly and intentionally is meant to contribute to, each goal should link to 1 or more SOs | Goal 1: SO: Community: Build a culture of communication that is evidence based, race conscious, institutionally focused, systemically aware, and equity advancing. SO: Community: Remove barriers to equitable participation by developing, incentivizing and creating structures for all employees to engage in and design professional learning SO: Scholarship: Evaluate and improve Diversity, Equity, and Inclusion practices in classroom environments, campus activities, departments, schools, and administrative units Goal 2: |

| | | | SO: Completion- Develop pathways that provide students with clarity about degree, certificate, and transfer requirements. SO: Completion- Design and promote programs and services that intentionally target a reduction in equity gaps in completion outcomes. |
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| Identify specific actions your program/service area will engage in to accomplish this goal. | | es may include: policy or practice changes; atives, curricular changes, etc. | · |
| | | | comfortable looking at data, so I will take that approach. 3. I will continue to help lead and facilitate the multiple initiatives discussed above including AB1705, MESA, and multiple grants. |
| Does this Action Plan require resources | if yes, o | complete resource request form | □Yes ⊠No |
| Lead Writer and Manager Inform | nation | | |
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| Name of Program/Unit | School of Mathematics & Natural Sciences |
|--|--|
| Manager Name | Isabel O'Connor |
| Submission Date of Program Review Draft to Manager for feedback | 5/8/23 |
| Submission Date of Program Review Final Draft to Office of Institutional Effectiveness | 5/31/23 |