# Bakersfield College
# Program Review – Annual Update

Program Name: **Mathematics, Engineering, Science Achievement (MESA)**

Program Type:  ☐ Instructional  ☐ Student Affairs  ☐ Administrative Service  ☒ Other

> ***Bakersfield College Mission****: Bakersfield College provides opportunities for students from diverse economic, cultural, and educational backgrounds to attain Associate and Baccalaureate degrees and certificates, workplace skills, and preparation for transfer. Our rigorous and supportive learning environment fosters students' abilities to think critically, communicate effectively, and demonstrate competencies and skills in order to engage productively in their communities and the world.*

Describe how the program supports the Bakersfield College Mission:

**The MESA program has been and will continue to create, provide, and connect under-represented and disadvantaged students to opportunities that will prepare them to transfer and successfully complete their desired degree(s) and promote equity. MESA establishes holistic individuals, with whom, are able to think critically, communicate effectively, and demonstrate vital skills that will continue their journey as a student and as a life-long learner in the community.**

Program Mission Statement:

**Bakersfield College's MESA provides a rigorous and supportive learning environment that promotes under-represented and socioeconomically disadvantaged students to think critically, analyze, and persist in STEM education. MESA has awareness of the discrepancies in the community and strives to create equity and equality to all disadvantaged students who identify with one or more hardship by connecting them to engaging and equal opportunity entities and institutions. MESA's efforts are to increase the number of minority and low-income students to attain STEM guided pathways, be prepared to transfer to a four-year institution, and, finally, earn a degree in math, science, engineering, or computer science.**

> *Instructional Programs only:*
> A. List the degrees and Certificates of Achievement the program offers
> B. If your program offers both an A.A. and an A.S. degree in the same subject, please explain the rationale for offering both and the difference between the two.
> C. If your program offers a local degree in addition to the ADT degree, please explain the rationale for offering both.

**Progress on Program Goals:**
A. List the program's current goals.  For each goal (minimum of 2 goals), discuss progress and changes. If the program is addressing more than two (2) goals, please duplicate this section.  Please provide an action plan for each goal that gives the steps to completing the goal and the timeline.

| Program Goal | Which institutional goals from the Bakersfield College Strategic Plan will be advanced upon completion of this goal? (select all that apply) | Progress on goal achievement (choose one) | Status Update – Action Plan |
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| 1. Improve the academic success for at least 125 low-income and educationally disadvantaged students by providing resources consisting of a study center, tutoring, academic and professional workshops, academic counseling and advising, networking activities, field trips, scholarships, internships and research opportunities. | ☒ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☐ 3: Facilities<br>☐ 4: Oversight and Accountability<br>☒ 5: Leadership and Engagement | ☐ Completed: _____ (Date)<br>☐ Revised: _____ (Date)<br>☒ Ongoing: ___6/30/2018____ (Date) | 1.1 MESA Director will continue current duties and improve the performance of activities that have been established in the past thirteen years. In addition, she will seek new opportunities within education, governmental agencies and industry to promote the growth of the program, recruitment, and retention of students from underrepresented backgrounds into STEM fields.<br><br>1.2 Hire the appropriate staff to meet all reporting requirements.<br><br>1.3 Maintain MESA student files for each current/active student that consist of MESA application and intake form, complete student educational plan, and other academic records or forms to assist in student retention in STEM. |
| 2. Implement at least 5 efficient processes and practices and utilize existing college transfer centers to garner greater MESA student transfers to four-year colleges and universities. | ☒ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☒ 3: Facilities<br>☒ 4: Oversight and Accountability<br>☐ 5: Leadership and Engagement | ☐ Completed: _____ (Date)<br>☐ Revised: _____ (Date)<br>☒ Ongoing: ___6/30/2018_____ (Date) | 2.1 Counseling for MESA students will be provided by current MESA Counselor, M.A. Merissa Paulson, on a part-time basis or by the BC STEM counselors, Engineering counselor and Transfer counselor.<br><br>2.2 MESA, STEM, and Transfer counselors will develop transfer pathways and Transfer Agreement Guarantee (TAG).<br><br>2.3 Individualized institution information for transfer and selection criteria will be |

| | | | provided to all 125 MESA enrolled students and ASEM students. |
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| | | | 2.4 Engineering Liaison Council (ELC) meetings will be attended by the Engineering Faculty sponsor, MESA Director, or MESA/STEM Counselor to ensure all new information regarding ELC and transferability is up-to-date with MESA staff. |
| 3. Implement strategies to increase the rate at which MESA students are deemed transfer ready in Science, Technology, Engineering, and Mathematics (STEM) majors by at least 1.5% every academic year. | ☒ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☒ 3: Facilities<br>☒ 4: Oversight and Accountability<br>☒ 5: Leadership and Engagement | ☐ Completed: _____ (Date)<br>☐ Revised: _____ (Date)<br>☒ Ongoing: ___6/30/2018_____ (Date) | 3.1 As a result of attending ELC meetings, the MESA Director, MESA Counselor, and Faculty sponsor will contribute knowledge to the Transfer Model Curriculum.<br><br>3.2 MESA students must attend mandatory meetings with the MESA Counselor or MESA Director to reevaluate student educational plan each semester.<br><br>3.3 Maintain close working relations with BC transfer center and transfer four-year institution as well as visit one four-year institution per academic year. |
| 4. Improve the academic performance of 125 MESA students. | ☒ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☐ 3: Facilities<br>☐ 4: Oversight and Accountability<br>☐ 5: Leadership and Engagement | ☐ Completed: _____ (Date)<br>☐ Revised: _____ (Date)<br>☒ Ongoing: ___6/30/2018_____ (Date) | 4.1 Tutoring services will also be provided in the center. The center is equipped with white boards, printers, copier, and LCD board for MESA students.<br><br>4.2 MESA Director will train and schedule tutoring and Academic Excellence Workshops (AEW) hours for each semester. AEWs will be offered in the center as well in gatekeeping courses. |

| | | | 4.3 Provide an academic model that supports critical thinking and a STEM learning culture for all student enrolled in the program.

4.4 Carry on to provide support where necessary, and make sure the correct resources are in place for academic success, and work with the MESA Counselor to ensure we have a team process for serving students as a whole.

4.5 Coordinate and collaborate with student services on campus by providing STEM specific information and academic resources to counselors, advisors, and faculty for student retention and course completion |
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| 5. Increase the leadership skills and raise educational expectations of 125 MESA students. | ☒ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☐ 3: Facilities<br>☐ 4: Oversight and Accountability<br>☒ 5: Leadership and Engagement | ☐ Completed: _____ (Date)<br>☐ Revised: _____ (Date)<br>☒ Ongoing: ____6/30/2018_____ (Date) | 5.1 MESA Orientation course will be offered and required in a series of student development workshops throughout the academic year for all MESA students. Workshops will be occurring once a week for 12 weeks and will cover various student development topics.

5.2 Professional workshops will also be presented by various national professional organizations and there will be opportunities to attend national conferences. Local schools and their organizations will also be included with MESA students in STEM involvement at the community level. |

| | | | 5.3 MESA will continue to host the STEM & Pre-Health Conference in collaboration with a four-year institution, which will provide various resources for community members. |
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| 6. Strengthen relationships with educators, prospective employers in business and industry to establish student internships, scholarships and other career opportunities for at least 125 MESA students. | ☐ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☒ 3: Facilities<br>☒ 4: Oversight and Accountability<br>☒ 5: Leadership and Engagement | ☐ Completed: _____ (Date)<br>☐ Revised: _____ (Date)<br>☒ Ongoing: ___6/30/2018_____ (Date) | 6.1 MESA has established strong relationships with faculty and local industry. The BC-MESA board and active industry representatives include over 20 partners. MESA has also established a campus-wide network with the Director of Extended Opportunity Programs & Services (EOPS), Financial Aid, and Admissions and Record to improve the performance and outcomes of the MESA Program and grant.<br><br>6.2 MESA Director will be involved with a campus-wide council that also includes Faculty Sponsor, and representatives from the following departments: Articulation, Matriculation, Counseling, Tutorial Services, EOPS, and Financial Aid. |
| 7. Establish partnerships with MESA Engineering Programs (MEP), MESA Schools Programs (MSP), California Alliance for Minority Participation, or similar programs in an effort to provide | ☐ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☐ 3: Facilities<br>☐ 4: Oversight and Accountability<br>☒ 5: Leadership and Engagement | ☐ Completed: _____ (Date)<br>☐ Revised: _____ (Date)<br>☒ Ongoing: __6/30/2018_____ (Date) | 7.1 MESA students will collaborate with MEPs across California and Multicultural Engineering Programs and STEM Programs from Cal Poly SLO & Pomona, CSU Fresno, and CSU Bakersfield. MESA has established liaison relationships with MEPs from San Jose State University and CSU Fresno.<br><br>7.2 Promote community partnerships with industry by providing a life learning |

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| optimum student support services. | | | experience via mentors from professionals in STEM fields. |
| 8. Implement strategies to collaborate with campus programs such as Student Equity (SB 860) and Student Success and Support Act (SB1456) to leverage additional resources and opportunities for 125 MESA students, and to ensure that MESA is integrated into the campus culture and infrastructure. | ☐ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☐ 3: Facilities<br>☒ 4: Oversight and Accountability<br>☒ 5: Leadership and Engagement | ☐ Completed: _____ (Date)<br>☐ Revised: _____ (Date)<br>☒ Ongoing: ___6/30/2018_____(Date) | 8.1 MESA aligns with BC's Student Equity Plan by identifying success indicators and by having its own Student Success Scorecard and comparing it to BC's. Success indicators include access, course completion (retention), ESL & basic skills completion, degree & certificate completion, and transfer.<br><br>8.2 MESA Counselor will work with students in creating a student educational plan and monitor students' progress each semester. Additional support services will be offered to MESA students as needed.<br><br>8.3 MESA will conduct a series of high school outreach presentations in classrooms catering to specific groups and attending career fairs representing the MESA program. Prior to program admission, MESA will identify students who need additional support services and refer them to such resources. Lastly, implementing semester progress report checks will allow MESA students to track their progress in their courses.<br><br>8.4 MESA will establish expectations and requirements upon admitting each student. MESA will support students in declaring a STEM degree of their interest and assist in career pathways. |

B.  List new or revised goals (if applicable)

| New/Replacement Program Goal | Which institutional goals will be advanced upon completion of this goal?  (select all that apply) | Status Update – Action Plan |
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| 9. MESA will focus and prioritize recruiting African-American STEM students by encouraging diversity, equity, equality, and a rigorous and persistent pathway to their academic discipline. The program will increase African-American MESA membership by 4%. | ☒ 1: Student Learning<br>☒ 2: Student Progression and Completion<br>☐ 3: Facilities<br>☒ 4: Oversight and Accountability<br>☐ 5: Leadership and Engagement | 9.1 MESA will continue to collaborate with other entities on the BC campus to diligently recruit students who identify themselves as being of African-American decent and a declared STEM major.<br><br>9.2 MESA will encourage counselors, advisors, staff members, including STEM professors, to refer students who identify as African-American STEM major to the program. |

**Best Practices:**
Programs often do something particularly well; usually, they have learned through assessment – sometimes trial and error – what solves a problem or makes their programs work so well.  These are often called Best Practices and can help others.  Please share the practices your program has found to be effective.

MESA is a true comprehensive STEM pathway that has guided, provided, and prepared students holistically for their next academic step in the pursuit of higher education. These services include: enrollment into appropriate STEM major, academic support (mandatory grade checks and office hours), intrusive counseling, providing internship, research, and scholarship opportunities, and eventually bridging the process of transferring to a four-year institution. MESA is present to establish and encourage student success.   MESA empowers students by bringing awareness to a STEM learning culture.

**Program Analysis**:
Take a look at your trend data (all programs should have some form of data that is used to look at changes over time).
1.  Please report on any unexpected changes or challenges that your program encountered this cycle:
    **Yes, our program was relocated from an all-exclusive dedicated space for MESA students and staff, to a shared space with other programs. Data reflect the negative effects this had on our students and how this has created a negative impact for them in terms of academic achievement in GPA falling below a 2.0.**
2.  How does your trend data impact your decision making process for your program?
    **The down trend reflected on our student success data has affected my resource allocation decision of time and funding.  As before we were able to service exclusively MESA students, and due to the shared building, my staff and I are responsible for much more than our students and their success. Our MESA students are competing with general STEM majors for study space, work space, and meaningful counseling sessions as well as**

my time as a mentor and MESA director.   The decision to look for other sources besides the MESA grant for funding to attain more much need staff has been added another task to my duties, thus; it was taken away time from my students.

3.  Were there any changes to student success and retention for face-to-face, as well as online/distance courses?
    **In regards to online/distance courses, we do not provide those services. However, in regards to student success, yes there was a significant change. Because of other students utilizing the building and its resources, I, as the MESA director, am required to meet the demands of these generalized STEM students because there are no other staff members present at the moment. This has me shift my priorities as a strictly MESA service provider to a STEM service provider and thus dedicating less time to my specific MESA student cohort.**

    **The 2013-2014 academic year, MESA had an average retained rate of 92.5% and success rate of 83%.  This particular academic year, MESA had an established dedicated area for its services and students were given the respected time and dedication that they deserved. The 2014-2015 academic year is referred to as the "transitional year" in which MESA allowed any STEM student to utilize the facility to prepare for the move of location in the upcoming 2015-2016 year. For the transitional year, the average retained rate was 91.52% and success rate was 79.5%; for the final move those rates dropped even more so, the retained rate was reported to be 91.5% and 76.5% for success rate. Although the averages of retention and success have been dropping incrementally, it is still well-above the reported data from the STEM's department and even Bakersfield College as a whole. However, this simple fact does not hide the fact that MESA's rates were not as high as they were prior to moving spaces and sharing responsibilities with the STEM program.**

4.  Were there any changes to student demographics (age, gender, or ethnicity) for the past cycle?
    **According to our trend and data, there has been unfortunately a steady decrease in female STEM student membership, although the student headcount for females attending BC has incrementally increased from year to year.**

**Resource Request and Analysis:**

| Resource Request | | If Fulfilled, Discuss How Previous Year's Requests Impact Program Effectiveness? |
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| **Positions:** *Discuss the impact new and/or replacement faculty and/or staff had on your program's effectiveness.* | ☐ 1: Classified Staff<br>☐ 2: Faculty | N/A |
| **Professional Development:** *Describe briefly, the effectiveness of the professional development your program has been* | ☒ 1: Provided Professional Development<br>☐ 2: Attended Professional Development | MESA has provided mock interviews and resume workshops for students. MESA has collaborated with other facilities and departments on campus, such as local industry Human Resources and recruiters from America Society of Civil Engineer, Chevron, Aera Energy and other professional organizations, to participate and facilitate professional development events. |

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| *engaged in (either providing or attending) during the last cycle* | | |
| **Facilities:** *If your program received a building remodel or renovation, additional furniture or beyond routine maintenance, please explain how this request or requests impacts your program and helps contribute to student success.* | ☒ 1: Space Allocation<br>☒ 2: Renovation<br>☒ 3: Furniture<br>☐ 4: Other<br>☐ 5: Beyond Routine Maintenance | MESA center was relocated to the AERA STEM success center. The new office aided with student meetings, which were now confidential and private. Also, the conference area allowed for students to be exposed to online trainer webinars in STEM such as NASA Community College Aerospace Scholars. |
| **Technology:** *If your program received technology (audio/visual – projectors, TV's, document cameras) and computers, how does the technology impact your program and help contribute to student success?* | ☐ 1: Replacement Technology<br>☐ 2: New Technology<br>☐ 3: Software<br>☐ 4: Other_____ | N/A |
| **Resource Request** | | **Discuss How Effective Request is for Student Success?** |
| **Other Equipment:** *If your program received equipment that is not considered audio/visual or computer equipment technology, please explain how these resources impact your program and help contribute to student success.* | ☐ 1: Replacement<br>☐ 2: New<br>☐ 3: Other_____ | N/A |

| **Budget:**<br>*Explain how your budget justifications will contribute to increased student success for your program. (Fiscal requests will be submitted by the faculty chair and/or area administrator.)* | | |
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**Conclusions & Snapshot:**

Present any conclusions and findings of the program.  This is an opportunity to provide a brief abstract or synopsis of your program's current circumstances and needs.  Consider this a snapshot of your program, if someone were to only read this portion of your annual program review.

**MESA values student success, priorities equity, and advocates for diversity in all areas of STEM. Under-represented and low-income students have the opportunity to reach their full potential with the aid of tutoring services, mentorship, scholarship opportunities, summer internships, and research position opportunities, all due to the established relationships and collaborations the MESA program has created in the community as well across the state of California. MESA strives for every student to be successful and be transfer-ready in a reasonable amount of time as well as have them be competitive for transfer admission in the STEM guided pathways.**