University of Arkansas at Monticello

Academic Unit Annual Report

Unit: Math and Natural Sciences

Academic Year: 2020 - 2021

What is the Unit Vision, Mission and Strategic Plan including goals, actions and key performance indicators (KPI)? Please identify new goals from continuing goals. (insert strategic plan, goals and KPIs below)

In Table 1, provide assessment of progress toward meeting KPIs during the past academic year and what changes, if any, might be considered to better meet goals.

Table 1A: Assessment of Key Performance Indicators from the previous year

KPI	Assessment of Progress	Implications for Future Planning/Change
1A Get the Math and Science faculty up to speed with the new assessment process	Had meetings and electronic discussions to discuss the process. Used examples. Team talked about possible exercises and discussed rubrics.	Faculty worked overtime to provide online instruction for those in quarantine, and not enough time was put forth on assessment. More work is needed.
1B. Review the Natural Science curriculum and update as needed.	Several faculty discussions were held on this topic. Some felt more upper level hours needed to be added to the program. Others felt that adding specific course requirements would remove flexibility of that major.	No changes were made at this time. At some point, the Physical Science Option needs to be revamped. It is basically a chemistry degree without the math requirement. The Life Science option seems to be working well for the allied health majors.
1C. Review scheduling for the Quantitative Literacy with Review (QLwR) and College Algebra with Review (CAwR) courses and improve offering times	We reviewed the 5 day per week linear format of the QL with Review course. Everyone agreed the linear format is best for the students, but adding some flexibility would benefit some students.	One section now has lab that meets immediately after lecture on M W instead of at the same time on T Th. Another online section was added for the students needing the online option.
1D. Make sure our courses match up to the Arkansas Course Transfer System (ACTS) syllabi in terms of content	Great plan, but only major discussion was with Principles of Biology course content, which is a serious problem.	Paperwork will be submitted to ADHE in the future to correct the content listing and transferability (both into and out of UAM) of those courses.
1E. Have faculty review open source and electronic	The greatest progress was made in mathematics. The electronic supplemental homework programs	Continue looking at low cost options for sciences, especially the labs. Develop our own if that is our best option.

KPI	Assessment of Progress	Implications for Future Planning/Change
book options for courses	are largely chosen based on them being no cost.	
2A. Upgrade Lab equipment	$50,000 was set aside by the University for purchase of lab equipment. The largest piece of equipment is a Nuclear Magnetic Resonance Spectrometer for Chemistry. That purchase is in progress.	Systematically replace aging and broken lab equipment as funds allow. A written maintenance/replacement plan may be developed for certain instruments.
2B. Undergo a major Science Center cleanup	Some classrooms were cleaned, and some of the B-wing labs were organized. The C-wing needs continued work.	We plan to do a large scale M&R for equipment that can't be repaired.
3A. Replace vacancies with properly trained and experienced faculty	4 of 4 vacancies have been filled with qualified personnel; however, it was difficult due to salary constraints.	Continue looking for young faculty talent that will work on the lower end of the pay scale. We do need to have real discussions with the administration on the current salaries of faculty.
3B Provide appropriate faculty development opportunities to faculty	Some specific training was done via zoom. Some on video. About one fourth of the faculty took part. Faculty need the face to face instruction on WeevilNet and Blackboard.	Continue to provide training to faculty by the dean, or by peers. Use external trainers where needed.
4A. Recruit local schools	This was greatly limited due to COVID. Only one visit was made to a local high school, and the meeting was largely with administration	Make contacts with the schools as early as possible and get the faculty in front of the high school classes as much as possible.
4B Recruit schools outside our local area	This was greatly limited due to COVID. No visits were made with schools outside the area, except an invited visit to Star City; however, this was for reasons other than student recruiting.	Establish both face to face and virtual meetings with teachers of schools outside the area whenever possible. Restart the Science Fair, Math Contests, and other events to bring kids to our campus

List, in Table 2, the Academic Unit Student Learning Outcomes (SLO) and the alignment with UAM and Unit Vision, Mission, and Strategic Plans

Table 2: Unit Student Learning Outcomes

University Student Learning Outcome	Unit Student Learning Outcome (may have more than one unit SLOs related to each University SLO; List each one)	Alignment with UAM/University Vision, Mission and Strategic Plan	Alignment with Unit Vision, Mission, and Strategic Plan
Communication: Students will communicate effectively in social, academic, and professional contexts using a variety of means, including written, oral, quantitative, and/or visual modes as appropriate to topic, audience, and discipline	Be able to clearly express mathematical and/or scientific ideas in oral and written communication	These skills are necessary for our graduates to contribute to the economic and quality of life indicators in the community, state, and region.	The curricula in Math and Sciences are the foundations for the content knowledge needed for this SLO. The upgrading of the major program requirements is important in keeping the programs up to date and relevant.
Critical Thinking: Students will demonstrate critical thinking in evaluating all forms of persuasion and/or ideas, in formulating innovative strategies, and in solving problems.	Have a core knowledge of the major discipline Be able to demonstrate the ability to apply scientific and/or mathematical concepts to real world situations.	This is the basis for our graduates to succeed in a global environment, be successful in entrepreneurial endeavors, and be a productive member of the community	Our mission states that we wish to provide opportunities for our students to improve their understanding of math and science concepts and provide proper training in these concepts in our support courses to other academic units.
Global Learning: Students will demonstrate sensitivity to and understanding of diversity issues pertaining to race, ethnicity, and gender and will be capable of anticipating how their actions affect campus, local, and global communities.	Be prepared for immediate employment in a scientific, technical, medical, or educational environment. Be prepared to enter graduate or professional school in the appropriate area	This is the basis for our graduates to succeed in a global environment, be successful in entrepreneurial endeavors, and be a productive member of the community	Math and Sciences wants to educate students to better understand the role of science in events around the world and locally.

University Student Learning Outcome	Unit Student Learning Outcome (may have more than one unit SLOs related to each University SLO; List each one)	Alignment with UAM/University Vision, Mission and Strategic Plan	Alignment with Unit Vision, Mission, and Strategic Plan
Teamwork: Students will work collaboratively to reach a common goal and will demonstrate the characteristics of productive citizens.	Be prepared for immediate employment in a scientific, technical, medical, or educational environment Be prepared to enter graduate or professional school in the appropriate area Be able to clearly express mathematical and/or scientific ideas in oral and written communication	The world is becoming more technical in nature and our graduates must be prepared to fill the technology related roles in the community. A major factor in quality of life in any community is the quality of the health care system which is a team oriented system in our society. Our programs are very successful at preparing students for all health care professional programs.	It is a major component found in our mission statement. It is strongly related to the updating of curricula as part of our strategic plan to make sure our programs are current and relevant. One of the major components of the mission statement for Math and Sciences is to prepare our students for graduate and pre-professional programs.

Describe how Student Learning Outcomes are assessed in the unit and how the results/data are used for course/program/unit improvements?

The Student Learning Outcomes (SLOs) are measured in our courses through student performance on exams, quizzes, laboratory exercises, field course journals, homework assignments, research projects, reports, and presentations. Further assessment is done using performance on nationally normed examinations such as the American Chemical Society (ACS) standardized final examinations and pre-professional placement exams such as GRE, PCAT, MCAT, OAT, and DAT and post graduate placement into graduate programs, professional programs, and employment. This year due to COVID, some of the professional programs removed the requirement of the standardized test score, like the PCAT for pharmacy. Other professional schools limited the number of students that could take the exams on given dates, and some students have elected to take the MCAT this summer, after graduation, instead of prior to their senior year. They will now have a gap year between graduating from undergraduate school and entering medical school. This year, we have 3/3 students accepted to medical school, 5/5 applicants accepted into pharmacy school, 2/2 applicants accepted to dental schools, and several others accepted into allied health and graduate programs.

Beginning this year the courses identified for assessment were reviewed, and each course instructor selected an assignment or group of assignments that would be used to assess the category selected. Using the appropriate rubric, information would be provided on students in those courses. The courses mapped and the rubrics used are shown below:

Course	Rubric	Status
CHEM 4742 Advanced Lab Techniques	Communication; Oral	Completed, see Addendum 4
BIOL 3223 Biological Statistics	Critical Thinking	No data collected this year
CHEM 3414 Organic Chemistry II	Critical Thinking	Completed, see Addendum 4
ESCI 1081 Earth and Atmosphere Lab	Critical Thinking	No Data Collected this year
MATH 3495 Calculus II	Critical Thinking	Completed, see Addendum 4
MATH 3545 Calculus III	Critical Thinking	Completed, see Addendum 4
BIOL 2143 Botany	Global Learning; Global Self-Awareness	No data collected this year
BIOL 2171 Botany Lab	Team Work	No data collected this year
BIOL 3484 General Ecology	Team Work	No data collected this year
CHEM 1121 Gen Chem I Lab (for either Chem or Natural Science major)	Team Work	Completed, see Addendum 4

With the number of students that were placed in quarantine during the semester, many of the faculty essentially had to teach the courses twice; once face to face and again online for those in quarantine. Because of the extra duties, some faculty simply weren't able to complete the assigned assessment as planned. Others were assessed, but only partially. Since this was the first time using this method of assessment we can submit what we have to be reviewed by the committee, and hopefully improve each year as we get a better feel for the process.

Public/Stakeholder/Student Notification of SLOs

List all locations/methods used to meet the HLC requirement to notify the public, students and other stakeholders of the unit SLO an. (Examples: unit website, course syllabi, unit publications, unit/accreditation reports, etc.)

- Posted in the glass case at the main entrance to the Science Center
- Posted on the School of Math and Sciences website at: http://uam-web2.uamont.edu/pdfs/mnsciences/mns%20student%20learning%20outcomes.pdf
- Course syllabi

Enrollment

Table 3: Number of Undergraduate and Graduate Program Majors (Data Source: Institutional Research)

UNDERGRADUATE PROGRAM MAJOR: Biology

Classification	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	3-Year Total & Average	10-Year Total & Average
Freshman	10	16	16	29	19	31	36	20	43	30	93 / 31	250 / 25
Sophomore	3	10	5	8	16	10	18	20	19	15	54 /18	124 / 12.4
Junior	9	6	11	5	6	19	9	23	20	13	56 / 18.7	121 / 12.1
Senior	20	16	10	18	12	16	21	32	20	15	67 / 22.3	180 / 18
Post Bach	0	1	1	0	0	0	0	0	0	0	0 / 0	2 / 0.2
Total	42	49	43	60	53	77	85	95	102	73	270 / 90	679 / 67.9

UNDERGRADUATE PROGRAM MAJOR: Chemistry

Classification	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	3-Year Total & Average	10-Year Total & Average
Freshman	3	6	10	13	3	14	10	8	16	13	37 / 12.3	96 / 9.6
Sophomore	3	4	4	5	3	8	6	10	12	7	29 / 9.7	62 / 6.2
Junior	3	4	7	4	7	5	8	16	12	10	38 / 12.7	76 / 7.6
Senior	5	4	4	6	6	4	7	14	13	8	35 / 11.7	71 / 7.1
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	14	18	25	28	19	31	31	48	53	38	139 /46.3	305 / 30.5

UNDERGRADUATE PROGRAM MAJOR: Mathematics

Classification	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	3-Year Total & Average	10-Year Total & Average
Freshman	9	8	6	8	5	8	9	3	10	4	17 / 5.7	70 / 7.0
Sophomore	3	5	2	2	2	6	4	5	2	3	10 / 3.3	34 / 3.4
Junior	4	3	9	4	3	2	3	0	3	1	4 / 1.3	32 / 3.2
Senior	5	3	4	3	6	1	4	4	0	2	6 / 2	32 / 3.2
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	22	19	21	17	16	17	20	12	15	10	37 / 12.3	169 / 16.9

UNDERGRADUATE PROGRAM MAJOR: Natural Science

Classification	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	3-Year Total & Average	10-Year Total & Average
Freshman	2	0	1	14	19	10	13	18	8	9	35 / 11.7	94 / 9.4
Sophomore	2	2	0	9	4	4	5	9	8	9	26 / 8.7	52 / 5.2
Junior	4	3	2	7	5	6	5	6	4	4	14 / 4.7	46 / 4.6
Senior	4	3	5	6	5	6	5	2	5	7	14 / 4.7	48 / 4.8
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	12	8	8	36	33	26	28	35	25	29	89 / 29.7	240 / 24

UNDERGRADUATE PROGRAM MAJOR: Pre-Engineering

Classification	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	3-Year Total & Average	10-Year Total & Average
Freshman	9	10	8	11	10	9	5	6	10	7	23 / 7.7	85 / 8.5
Sophomore	1	2	2	3	1	1	1	4	1	4	9 / 3	20 / 2.0
Junior	0	0	1	1	0	0	0	0	1	0	1 / 0.3	3 / 0.3
Senior	0	0	0	0	2	0	0	0	0	2	2 0.7	4 / 0.4
Post Bach	1	0	0	0	0	0	0	0	0	0	0 / 0	1 / 0.1
Total	11	12	11	15	13	10	6	10	12	13	35 / 11.7	113 / 11.3

UNDERGRADUATE PROGRAM MAJOR: Pre-Medicine

Classification	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	3-Year Total & Average	10-Year Total & Average
Freshman	20	23	22	27	21	14	13	15	17	16	48 / 16	188 / 18.8
Sophomore	7	6	6	3	16	4	5	14	8	8	30 / 10	77 / 7.7
Junior	3	7	1	5	1	3	5	13	12	8	33 / 11	58 / 5.8
Senior	2	4	5	1	6	2	5	9	10	6	25 / 8.3	50 / 5.0
Post Bach	1	1	1	0	0	0	0	0	0	0	0 / 0	3 / 0.3
Total	33	41	35	36	44	23	28	51	47	38	136 / 45.3	376 / 37.6

UNDERGRADUATE PROGRAM MAJOR: Pre-Pharmacy

Classification	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	3-Year Total & Average	10-Year Total & Average
Freshman	15	18	15	11	11	6	4	7	9	9	25 / 8.3	105 / 10.5
Sophomore	8	5	8	6	6	4	5	3	4	4	11 / 3.7	53 / 5.3
Junior	3	5	3	9	7	2	3	7	4	2	13 / 4.3	45 / 4.5
Senior	3	4	0	0	3	1	2	3	3	4	10 / 3.3	23 / 2.3
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	29	32	26	26	27	13	14	20	20	19	59 / 19.7	226 / 22.6

UNDERGRADUATE PROGRAM MAJOR: Allied Health

Classification	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	3-Year Total & Average	10-Year Total & Average
Freshman	29	30	16	0	0	9	14	18	10	11	39 / 13	137 / 13.7
Sophomore	12	11	9	0	0	2	0	10	8	8	26 / 8.7	60 / 6
Junior	5	6	3	0	0	1	2	3	3	3	9 / 3	26 / 2.6
Senior	1	2	1	0	0	1	0	3	2	5	10 / 3.3	15 / 1.5
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	47	49	29	0	0	13	16	34	23	27	84 / 28	238 / 23.8

The above tables reflect the number of students within each major, so a student can be shown multiple times in this table. In Math and Sciences very few students are listed as a single major. Many that are listed as a single major are likely not listed correctly in WeevilNet. Typically students in the pre-medicine and pre-pharmacy plans are also biology and chemistry double majors. Pre-engineering plan students are listed as mathematics majors, and Allied Health plan students are sometimes listed as Natural Science majors. This is necessary due to financial aid laws prevent students from getting federal aid unless they are enrolled in a major that leads to a specific degree. A lot of effort goes into making sure the students are properly listed; however, it is impossible to get 100% accuracy since students are often indecisive about their major.

What do the data indicate in regard to strengths, weaknesses, opportunities for growth and threats to effectiveness?

Strengths

- The Biology/Biochemistry double major that we encourage all pre-professional school candidates to do is clearly the strength of Math &Sciences. Those students have a strong showing each year, and have excellent record of acceptance into professional programs and graduate schools. If the double major were not so strong, the number of chemistry majors would likely be below the viability line.

Weaknesses

- Mathematics has been a weakness in terms of numbers of majors and graduates. We have averaged around 4 per year for the last several years. An occasional good year puts us above the viability line, and a bad year drops us below it. Just last year we added the Data Science Option of the Mathematics major in hopes that it would attract more students to that major, possibly even some CIS majors wanting to double major.
- Pre-Engineering is not a real program that we can offer. We lack facilities, faculty, and equipment to offer anything truly related to engineering. We currently sell the program by offering students opportunities to attend graduate engineering programs from any STEM major. The quality of student that is typical for the pre-engineering program is not the type of student that should be entering a four year engineering degree.

Opportunities for Growth

- Our classes are small enough that we have room to grow our majors significantly without the addition of new faculty members.
- With COVID restrictions easing up, we have more opportunity to recruit in the high schools

Threats to Effectiveness

- The number one threat is lack of students coming to UAM. There are several reasons this is a growing problem:
    - The student population in the UAM region is declining
    - UAM's facilities are poor compared to competitors
    - UAM's competitors are putting increased emphasis on recruiting the southeastern Arkansas public schools
    - The town and surrounding area offers little to attract young adults from outside the region
    - We are poorly marketed. Everyone hangs their hat on UAM being Arkansas' only school of forestry. The forestry program is a small part of UAM. It's stature doesn't help other units recruit.
    - Cost of attending college is increasing
- Losing faculty. Whether losing faculty to retirement or to other universities it is a huge problem because it is extremely difficult to hire new faculty to UAM because of low salary, location, facilities, and equipment.

Progression/Retention Data

Table 4: Retention/Progression and Completion Rates by Major (Data Source: Institutional Research)

Major:	Number	Percentage
Number of majors classified as juniors (60-89 hours) in fall 2018	34	100 %
Number and percentage graduated in that major graduating with a B.S. degree before or during 19-20 academic year	20	58.8%
Number and percentage graduated in that major graduating with a B.S. degree during 20-21 academic year	7	20.6 %

What do the data indicate in regard to strengths, weaknesses, opportunities for growth and threats to effectiveness?

Strengths

- Twenty-seven of the 34 students identified as juniors in the Fall 2018 term have completed degrees. Eighteen graduated during 2019-20 academic year. Two graduated prior to that year. Seven graduated during the 2020-21 academic year.
- Several of the students (13) completed a second major. All of these were Biology/Biochem majors
- Students that started their career at UAM tended to be completers more often than transfer students.

Weaknesses

- Five of the seven students that did not graduate by this year are transfer students. The students likely were not ready for the rigor of their program. The other two students will probably graduate within the next year if all goes according to plans.

Opportunities for Growth

- Get more professional students prepared for transferring hours back when they get early acceptance. One student of this group that did not graduate has achieved early acceptance to the UAMS College of Pharmacy. Under the rules for professional students many of these students can transfer hours back after their first year to get the UAM degree. Unfortunately, the one student is one general education course short of being able to do this. We hope to convince him to take the one course needed in the future for the degree.
- Stronger academic advising in the middle and at end of their career. One student was supposedly on schedule to graduate this year, but due to athletes being granted an extra year of eligibility, he decided not to take the courses needed to finish up.

Threats to Effectiveness

- Situations like one student in this group that transferred in 65 hours, signed up for classes, and may have attended a few, but then walked away

without bothering to drop courses. No one in the department even recognized his name when asked about him.

- Letting non-academic situations guide academic decisions. One student was supposedly on schedule to graduate this year, but due to athletics decided not to take the courses needed to finish up.
- Rising costs. College is becoming more expensive, but everything else such as rent, food, entertainment, vehicles, etc... are also increasing in price. It is putting a burden on our students trying to work enough hours to pay the bills and still be a college student.

Gateway Course Success (Applies only to units teaching Gateway Courses: Arts/Humanities, Math/Sciences, Social Behavioral)
(Data Source: Institutional Research)

Table 5: Gateway Course Success*

		2018-2019		2018-2019		2019-2020		2019-2020		2020-2021		2020-2021		3-Year Trend		3-Year Trend	
		*Passed		Failed		*Passed		Failed		*Passed		Failed		*Passed		Failed	
Course	Remediation	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
MATH 1003 Quantitative Lit	19 MATH ACT or Intermediate Algebra	140	65	77	35	130	67	64	33	109	64	62	36	379	65	203	35
MATH 1103 Q.L with Review	16 MATH ACT or Intro Algebra	99	51	97	49	81	54	69	46	83	44	106	56	263	49	272	51
MATH 1033 Trigonometry	19 MATH ACT or College Algebra	63	60	42	40	59	61	38	39	24	55	20	45	146	59	100	41
MATH 1043 College Algebra	22 MATH ACT or Intermediate Algebra	192	64	107	36	109	67	53	33	109	57	81	43	410	63	241	37
MATH 1143 Coll Alg w/Rev	19 MATH ACT or Intermediate Algebra	26	59	18	41	57	83	12	17	44	70	19	30	127	72	49	28
MATH 2255 Calculus I	MATH ACT 22 or College Algebra	33	54	28	46	26	59	18	41	30	73	11	27	89	61	57	39

*Passed = A, B, or C; Failed = D, F, or W

What do the data indicate in regard to strengths, weaknesses, opportunities for growth and threats to effectiveness?

Strengths

- The percentage of successful students in Calculus I has increased each year for the last three years.
- The success percentages in QL are fairly consistent over the past three years.
- The overall percentage of students enrolled in QL with Review increased from 21% in previous two years to 27% this year.
- The overall percentage of students enrolled in College Algebra with Review increased the past two year, probably due to the

fact that some of the participating ECHS schools are now offering this option to allow students with a 19 MATH ACT to enroll.

Weaknesses

- The number of students enrolled in math classes has declined each year over three years.
- Success rates were somewhat lower this year in several of the courses

Opportunities for Growth

- There is certainly room for improvement in the success rates in the corequisite courses, especially QL with Review.
- The increase in numbers of QL and QL with Review over the past few years will allow for more sections to be offered.
- Make changes in Intro to Algebra that are geared more for preparing students for QL with Review

Threats to Effectiveness

- Declining numbers will limit course offerings
- Consideration in elimination of Intro to Algebra in order to meet 75% goal of those needing remediation to be in a co-requisite course. Allowing even lower MATH ACT scores into current co-requisite courses could create a broad level of abilities that would make the course difficult to teach. Lower skilled students would likely have a lower pass rate than the better students.

Completion (Graduation/Program Viability)

Table 6: Number of Degrees/Credentials Awarded by Program/Major (Data Source: Institutional Research)

Number of Degrees Awarded:

Undergraduate Program/Major	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	Three-Year Total	Three-Year Average	Ten-Year Total	Ten Year Average
Biology	19	12	16	7	17	18	21	22	21	18	61	20.3	171	17.1
Chemistry	5	6	11	12	12	13	14	12	20	15	47	15.7	120	12
Mathematics	8	2	3	4	8	0	5	4	3	3	10	3.3	40	4
Natural Science	12	2	4	4	4	7	2	5	2	8	15	5	50	5
Total	44	22	34	27	41	38	42	43	46	44	133	44.3	381	38.1

Provide an analysis and summary of the data related to Progression/Retention/Program Viability including future plans to promote/maintain program viability.

- The number of Biology and Chemistry graduates remained fairly consistent and reasonably close to the three year average for each. Numbers are strong in these two areas despite the loss of several majors over the past few years.

- Mathematics fell below 4 graduates per year for the second consecutive year; however, more than 4 students should have graduated this year, but did not complete all requirements. They should graduate in the summer or fall, but will count on next year's numbers. With Mathematics graduates average being below 4 this year, we must improve or face program viability issues. The Mathematics-Data Science option was added last year in order to recruit more mathematics majors. It will be three more years before those students start graduating. Obviously we need to do a better job of recruiting into the mathematics major. Now that COVID restrictions are being relaxed we must get into the local schools and get the better mathematics students interested in our program. We also need to recruit other majors to become double majors in mathematics.
- Natural Science showed some growth, going from 2 graduates last year to 8 graduates this year. This is likely due to the rule that requires physical and occupational therapy applicants to complete a degree prior to the start of the professional program. This could also mean that more biology majors than usual struggled with organic chemistry and decided to opt for the less chemistry rigorous Natural Science major.

Faculty

Table 7: Faculty Profile, Teaching Load, and Other Assignments (Data Source: Institutional Research) (Credit/Contact)

Teaching Load

Faculty Name	Status/ Rank	Highest Degree	Area(s) of Responsibility	Summer II	Fall	Spring	Summer I	Other Assignments
Abedi, Farrokh	Assoc. Prof	Ph.D.	Mathematics		8 / 8	12 / 12		Assistant Dean for Mathematics
Barton, Laura	Instructor	M.S.	Mathematics	3 / 5	12 / 20	9 / 15	3 / 5	Director of the ACTM Math Contest
Fox, Victoria Lynn	Assoc. Prof	Ph.D.	Mathematics	6 / 6	14 /16	14 / 14	6 / 6	
Gavin, Jared	Assoc. Prof	Ph.D.	Mathematics	6 / 6	13 / 14	14 / 18		
Goodding, Alan	Instructor	MAT	Mathematics		18 / 18	18 / 18	6 / 6	
Martin, Carole	Assoc. Prof	Ed.D.	Mathematics		12 / 14	9 / 11		
Sayyar, Hassan	Assoc. Prof	Ph.D.	Mathematics		15 / 15	12 / 12	6 / 6	
Fairris, Jerry Jeff (Crossett)	Instructor		Mathematics		12 / 12**	9 / 9		
Cooper, Lura (McGehee)	Instructor	MAT	Mathematics	6 / 6 **	15 / 15**	15 / 15**	3 / 3**	
Burrows, Ross	Asst Prof	Ph.D.	Physics		15 / 15	15 / 15		
Abbott, Richard	Asst Professor	Ph.D.	Biology		9 / 18	9 / 18		Director UAM Herbarium
Bacon, Ed	Instructor/Prof Emeritus	Ph.D.	Biology		12 / 17	14 / 18	4 / 6	
Blount, Keith	Asst Prof	Ph.D.	Biology		13 / 18	14 / 18	4 / 6	Director, Research Program for

Faculty Name	Status/ Rank	Highest Degree	Area(s) of Responsibility	Summer II	Fall	Spring	Summer I	Other Assignments
								Minority Students
Chappell, Jessie	Lab Instructor	M.S.	Biology		7 / 17	8 / 15		Stockroom manager for A&P and Intro Biology labs
Hunt, John	Professor	Ph.D.	Biology	6 / 6	11 / 14	12 / 15		Director of Pre-Medicine Studies
Manning, Glenn	Assoc. Prof	Ph.D.	Biology		8 / 12			Left in December 2020
Morgan, Lauren	Lab Instructor	B.S.	Biology	2 / 6	5 / 13	5 / 13	1 / 3	Stockroom manager for Micribiology
Sims, Christopher	Professor	Ph.D.	Biology		10 / 12	15 / 20	3 / 3	Assistant Dean for the Sciences
Stewart, Mary	Professor	Ph.D.	Biology		11 / 15	9 / 9		
Grilliot, Matthew	Instructor (Adjunct)	Ph.D.	Biology		4 / 6	4 / 6		
Walker, Randall (McGehee)	Instructor	M.S.	Biology	4 / 6	11 / 15	19 / 15	4 / 6	
Bramlett, J. Morris	Professor	Ph.D.	Chemistry					Dean of Math and Sciences
Hatfield, Susan	Lab Instructor	M.S.	Chemistry	2 / 6	6 / 15	7 / 18	4 / 6	Stockroom manager for Intro and General Chemistry
Huang, Jinming	Assoc. Prof	Ph.D.	Chemistry		11 / 16	10 / 12	4 / 6	
Taylor, M. Jeffrey	Assoc. Prof	Ph.D.	Chemistry		8 / 12	8 / 12		
Williams, Andrew	Assoc. Prof	Ph.D.	Chemistry	4 / 6	13 / 14	15 / 16	4 / 6	Asst Director of Research Program for Minority Students (RPMs)
Sayyar, Kelley	Instructor	M.S.	Earth Science	4 / 6	17 / 22	13 / 17		
Early College High School Faculty								
Cupples, James	ADJ Instructor	M.S.	Math – Parkers Chapel H.S		3 / 5	3 / 5		
Bridgforth, Cherie	ADJ Instructor	M.A.T.	Math-White Hall H.S.		9 / 11	6 / 6		
Shelvia Ross	ADJ Instructor	M.A.T.	Math-Hamburg H.S.		14 / 14	9 / 9		ECHS and part time at Crossett College of Technology

What significant change, if any, has occurred in faculty during the past academic year?

Jill Hood left the UAM-McGehee campus, and Lura Cooper moved from the main campus to the McGehee campus to fill that position. Jerry Jeff Fairris returned to the UAM-Crossett campus in August 2020 after taking the spring term off to allow for Arkansas teacher retirement to be properly processed. Dr. Glenn Manning left UAM in December 2020. For the Spring 2021 term, Zoology was taught by Dr. Keith Blount. Dr. Ed Bacon taught the Herpetology course, and others picked up courses that would allow all courses to be covered. Three faculty announced retirement plans for May 2021. Dr. Farrokh Abedi (math), Dr. Mary Stewart (biology) and Dr. Jeff Taylor (chemistry) all announced their retirement. Dr Abedi was with UAM a total of 39 years. Dr. Taylor completed 15 years and Mary Stewart completed 13 years. All were top-notch faculty and a favorite among the students in their major. The hiring process continues; but three of the four vacancies are filled at this point. Ms. Lura Cooper will be returning from the McGehee campus to fill Dr. Abedi's role as the instructor for Calculus. She has been a very successful Calculus teacher at Dumas High School for many years, and has taught the course as a concurrent credit course in the past. Dr. Djamali Muhoza was hired to fill Dr. Taylor's vacancy. He will teach Biochemistry and other courses. Dr. Arturo Ferrer will replace Dr. Stewart. Currently he will teach Genetics and Cell Biology. The new hire will likely teach Microbiology and labs. We hope that Dr. Ferrer and the newest hire will be interchangeable in the courses they teach.

Table 8: Total Unit SSCH Production by Academic Year (ten year) (Data Source: Institutional Research)

Academic Year	Total SSCH Production	Percentage Change	Comment
2011-12	14909	+7.71%	not including 1137 concurrent enrollment
2012-13	14391	-3.60%	not including 1161 concurrent enrollment
2013-14	13546	-5.88%	not including 1070 concurrent enrollment
2014-15	15550	+14.8%	not including 1403 concurrent enrollment
2015-16	14696	-5.42%	not including 1430 concurrent enrollment
2016-17	13841	-5.82%	not including 1729 concurrent enrollment
2017-18	14421	+4.19%	not including 1296 concurrent enrollment
2018-19	11915	-17.4%	not including 554 concurrent enrollment
2019-20	10402	-13.7%	not including 381 concurrent enrollment
2020-21	9393	-9.7%	not including 369 concurrent enrollment

What significant change, if any, has occurred in unit SSCH during the past academic year and what might have impacted any change?
Based on the numbers provided, the School of Math and Sciences experienced its third consecutive year of greater than 9.7% decline in SSCH; however the decline this year was less than the two previous years. While some classes are smaller, there are a number of other courses that were large. Many in the unit were surprised to see such a decline. There are certainly fewer sections of many of the service courses than in the past. We are operating three sections of Intro Algebra, where in the past we offered as many as 8. The situation is similar in Intermediate Algebra. College Algebra only has an offering of 3-4 sections now in a typical semester instead of the 7 or 8 that we once did. We added Quantitative Literacy with Review in place of some of the removed sections, but only 4 sections.

The Science courses experienced similar declines. In freshmen level courses, such as General Chemistry I, there was a decline compared to the previous trend. At one point, we had well over 100 General Chemistry students in the fall term, but now we have less than 60. Principles of

Biology I once had an enrollment in the low 60's; however, in the fall 2020 the enrollment was only 33. These two courses often serve as a measure of enrollment health in our chemistry and biology majors because every entering freshman who plans on a career in pre-med, pre-pharmacy, pre-dental, or pre-optometry will take both of those courses.

Unit Agreements, MOUs, MOAs, Partnerships

Table 9: Unit Agreements-MOUs, MOAs, Partnerships, Etc.

Unit	Partner/Type	Purpose	Date	Length of Agreement	Date Renewed
None					

List/briefly describe notable faculty recognition, achievements/awards, service activities and/or scholarly activity during the past academic year.

Faculty Scholarly Activity

- Dr. Richard Abbott provided a week-long plant identification workshop at Weeks Bay National Estuarine Research Reserve on the gulf coast of Alabama. He has worked with graduate students from Arkansas State University and University of Southern Illinois at Carbondale on numerous field trips. He has worked with the Arkansas Heritage Commission botanists at 35 sites around the state. He had two papers published in refereed journals in the past year:
    1. Neubig, K.M. & Abbott, J.R. 2020, Interspecific hybridization in North American *Polygala* (Polygalaceae). JBRIT 14:47-56
    2. Kellog, E.A.; Abbott, J.R.; Bawa, K.S.; Gandhi, K.N..; Kailash, B.R.; Ganeshaiah, K.N.; Shrestha, U.B.; and Raven, P. 2020. Checklist of the Grasses of India. Phytokeys 163: 1-560.

- Dr. Farrokh Abedi worked with two students on projects that were to be presented at the Mathematical Association of America Arkansas-Oklahoma joint meeting; however, the meeting cancelled due to COVID. He has been very involved with Math Pathways.

- Dr. Ed Bacon works on research projects with seven students. Two abstracts were submitted to the Arkansas Academy of Sciences; however due to COVID the meeting was cancelled.

- Dr. Keith Blount has developed a research program dealing with vector-borne diseases that is far beyond what is expected at a school of this size. He has projects ongoing dealing with mosquito carried diseases, and another dealing with ticks. He was invited, as the only Arkansas representative, to be part of the multistate consortium dealing with tick-borne diseases and received funding for a summer research student. He presents at regional meetings and works closely with the Arkansas Department of Health.

- Dr. Burrows led a research group on a project involving free falling objects using basic equipment. The group presented their research at the state capitol at the Posters at the Capitol event. Their poster was recognized by several as being very good even though it wasn't selected for an award. Dr. Burrows' continued research with the Center for Space Plasma and Aeronomics Research (CSPAR) led to a major publication

this year.

1. Ion Acceleration in Multi-Fluid Plasma: Including Charge Separation induced Electric Field Effects in Supersonic Wave Layers, R.H. Burrows, Plasma, 2020.

- Dr. Lynn Fox has ongoing research projects in collaboration with Dr. Williams in chemistry where she and her students do statistical analysis of chemical compounds produced by algae.

- Dr. Jinming Huang continued his research in analyzing nitrate and nitrites in green leafy vegetables. He had one abstract ready for presentation at the Arkansas Academy of Sciences meeting; however the meeting was cancelled. He is in the process of submitting a paper for publication.

- Dr. John Hunt has completed his second book, along with Dr. Troy Best, *Mammals of the Southwestern United States*. It has a publication date of late 2022. It is a complementary text to the one that was published in early 2020, *Mammals of the Southeastern United States.* Dr. Hunt has research projects with 6 undergraduate students in which the energy content of seeds and other food for birds is analyzed using bomb calorimetry. He has two publications in refereed journals:
    1. Hunt, J.L. M.E. Grilliot, T.L. Best, D. Lozano-Lopez, E.R. Neilson, and I.C. Castillo. *In Press*. Energy content of seeds of common sunflowers (*Helianthus annuus*) in the diet of scaled quail (*Callipepla squamata)* in southeastern New Mexico. *Journal of the Arkansas Academy of Science*, 74.
    2. Hunt, J. L., M. E. Grilliot, T. L. Best, C. S. Deen, D. Lozano-Lopez, E. R. Neilson, and T. R. Schlegel-Ridgway. 2019. Energy content of seeds of Texas doveweed (*Croton texensis*) from the diet of mourning doves (*Zenaida macroura*) from southeastern New Mexico. *Journal of the Arkansas Academy of Science* 73:18-20.

  Dr. Hunt also had one student do a video presentation:
    1. Paige E. Eddington, John L. Hunt, Matthew E. Grilliot, Troy L. Best, Isaac C. Castillo, Faith A. Johnson, Tyneshia L. Kilgore, and Jacob H. Courson. Energy content of seeds of Palmer's pigweed (*Amaranthus palmeri*) in the diet of scaled quail (*Callipepla squamata*) in southeastern New Mexico. Presented at the meeting of the Arkansas Academy of Science, April 9, 2021 (Virtual meeting.)

- Dr. Glenn Manning continued herpetology research and had one publication:
    1. Manning, Glenn J., James M. Walker and James E. Cores. 2020. Behavior, Abundance, Local Distribution, Size, Reproduction, Diagnostic Characters, and Ontogeny of Triploid Parthenogenetic *Aspidoscelis exsanguis* (*Squamata*: *Teiidae*) in Northeastern New Mexico, USA. Herpetological Review 51(2): 201-207.

- Dr. Chris Sims has two collaborative projects ongoing with colleagues at Christian Brothers University in Memphis, TN. He authored a non-scientific article in Arkansas Wildlife entitled, "A lifetime of hunting buddies: reflections on friendships from the woods, lost and found."

- Dr. Andrew Williams has 6 research students working on analysis of fatty acid compounds produced by algae. He had several students scheduled to present research at numerous meetings. Most were cancelled, some did present their work virtually. The virtual presentations were:

1. Randa Jacks, Lauren Taylor, Lauren Van Dee, Andrew Williams. 2021, Poster: Determination of Fatty Acid Concentrations in Algae, Posters at the Capitol (video event).
2. Alaina Glover, Lauren Taylor, Lauren Van Dee, Andrew Williams. 2021 Poster: Extraction and Analysis of Medicinal Biomolecules in Witch Hazel. Posters at the Capitol (video event).
3. Peyton Ashcraft, Jason Rodriguez, Andrew Williams. 2021. Poster: Determination of Fatty Acid Concentrations in Algae. 28th Annual Arkansas Space Grant Consortium.
4. Alaina Glover, Lauren Taylor, Lauren Van Dee, Andrew Williams. 2021. Poster: Extraction and Analysis of Medicinal Biomolecules in Witch Hazel. 28th Annual Arkansas Space Grant Consortium.

Dr. Williams also had one publication during the year.

1. Schuman, A. J.; Raghavan, A.; Banziger, S. D.; Song, Y.; Hu, Z.-B.; Mash, B. L.; Williams, A. L.; Ren, T. Inorg. Chem. 2021, 60, in press; "Macrocyclic Chromium(III) Catecholate Complexes"; http://dx.doi.org/10.1021/acs.inorgchem.0c03224.

Notable Faculty or Faculty/Service Projects

- Dr. Richard Abbott is the director of the UAM Herbarium
- Dr. Farrokh serves as the Assistant Dean for Mathematics
- Dr Chris Sims serves as the Assistant Dean for the Sciences
- Dr. Ed Bacon is the coordinator for the local Arkansas Game and Fish Stream team and serves as the director of the Turner Neal Museum. He is the UAM coordinator for the USM Gulf Coast Research Lab, and director of the Ouachita River Basin Research Laboratory
- Ms. Laura Barton is the coordinator of the Regional ACTM Mathematics Contest
- Dr. Keith Blount is the director of the Research Program for Minority Students, and is the Arkansas representative for the Tick-Borne Disease Research Consortium which operates out of Texas A&M University.
- Dr. John Hunt is the chair of the Pre-Professional Committee, and he is also the campus representative for the Goldwater Scholarship Program, and is a member of the Ouachita Mountain Biological Station Board of Governors.
- Dr. Glenn Manning served on the Arkansas Dept of Higher Education's SURF Grant Committee
- Dr. Hassan Sayyar served as the director of the Southeast Region of the Arkansas Science Fair.

- Dr. Andrew Williams is the campus representative to the NASA-Arkansas Space Grant Consortium, and Assistant Director of the Research Program for Minority Students. Dr. Williams was named the Hornaday Outstanding Faculty Member of 2019-2020.

- Dr. Morris Bramlett serves as the director of the Pomeroy Planetarium, and is a member of the Arkansas Dean's Association Board of Directors

Faculty Grant Awards

- Dr. John Hunt, $1500, UAM Faculty Research Award. Survey of Bat Diversity in Arkansas

- Dr. Jinming Huang, $2400, UAM Centennial Opportunity Award. Equipment for Quantitative Analysis Lab; and $5500, Arkansas Space Grant Consortiium. Nitrate and Nitrite Analysis of Green Leafy Vegetables.

- Dr. Keith Blount, $16,000, UAM Centennial Opportunity Award. Purchase of dissecting microscopes for multiple labs.

- Dr. Andrew Williams, $5000, Arkansas Space Grant Consortium Minority STEM grant, with Lauren Van Dee, for Extraction and Analysis of Medicinal Biomolecules in Witch Hazel.

Describe any significant changes in the unit, in programs/degrees, during the past academic year.

The mathematics degree added the Data Science Option to its major. This degree plan is more applied math than the traditional mathematics degree, and involves building of computer programming skills for problem solving. This option should serve very well those interested in pre-engineering, or those that wish to have increased programming knowledge.

Three faculty have retired. Dr. Farrokh Abedi in Mathematics, Dr. Mary Stewart in Biology, and Dr. Jeff Taylor in Chemistry retired in May 2021. Ms. Lura Cooper was hired back from the McGehee campus to fill the void created by Dr. Abedi's departure. Dr. Arturo Quintero Ferrer will be replacing Dr. Stewart. Dr. Djamali Muhoza was selected to fill Dr. Taylor's position.

Dr. Glenn Manning left UAM in December 2020 to fill a position at Butler Community College in El Dorado, KS. The hiring process continues for Dr. Manning's position. His courses were covered by rearranging the faculty load in the spring 2021 term.

List program/curricular changes made in the past academic year and briefly describe the reasons for the change.

- The course Plants in Our World is intended to be a general knowledge course for any student. The previous instructor had a pre-requisite of Botany and Lab. The current instructor wants the course to be open to anyone, and not just those that have previously taken botany. So, the Botany and lab prerequisite was removed from the course.

- The courses PHSC 2203 Physical Science and PHSC 2251 Physical Science Lab have been resurrected. The courses have remained in the catalog; however, have not been taught in more than 30 years. These are great courses for students that want a broad coverage of multiple sciences (Physics, Chemistry, Earth Science, Astronomy) Hopefully this will alleviate some of the overcrowding in the other popular general education science courses.
- Anatomy and Physiology has not been taught on the Crossett campus for several years due to the lack of an instructor with proper qualifications. To allow those students to take the course without having to travel to the Monticello campus, the McGehee campus agreed to teach a section of lecture and lab online.
- Quantitative Literacy with Review has developed an alternate schedule for two sections. One section has the lab meeting later in the day on Monday and Wednesday so that MWF students can take the course more easily, and will not be required to come to campus five days per week. An online section has been developed that will allow greater flexibility for fully online students, or those with scheduling problems.

Describe unit initiatives/action steps taken in the past academic year to enhance teaching/learning and student engagement.

- The largest initiative taken by the faculty in Math and Sciences was to make everything that is normally available in a face-to-face available to those that are in quarantine due to COVID. Essentially every faculty developed videos and Blackboard assignments that would allow a student that is physically able to continue participating in the class. The faculty did an outstanding job despite the problems. Lauren Morgan, Jessie Chappell, and Susan Hatfield did an exceptional job keeping the labs operational and doing creative scheduling to maintain social distancing.
- A new NMR was ordered with funds set aside by the Chancellor. The new instrument has not been received yet, but faculty are already looking forward to implementing it into their organic and instrumental courses in the future.
- Two TV monitors have been purchased that will go into two of the smaller classrooms. The 75 in diagonal screens aren't large enough for rooms like B-18 or C-18 but should be fine in the smaller rooms. One has been mounted in room A-3 but needs additional wiring to be used.
- Math Pathways and the use of co-requisite courses continues to be implemented. With COVID, face-to-face meetings with the DANA Center were not possible; however, the increased frequency of Zoom meetings has more than made up for this.

Other Unit Student Success Data

Include any additional information pertinent to this report. Please avoid using student information that is prohibited by FERPA.

Acceptances into Professional Programs July 1, 2020-June 30, 2021
%Indicates acceptance prior to earning a degree
***Indicates graduation prior to 2020-21 academic year**

Last	First Name	City	St	Confer Dt	Acad Plan 1	Acad Plan 2	Initial Placement
		Warren	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Medical School, UAMS
		Mountain View	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Medical School, UAMS
		Monticello	AR	5/20/2020	BIOL_MAJ		D. O. School, NYIT, Jonesboro, AR

Last	First Name	City	St	Confer Dt	Acad Plan 1	Acad Plan 2	Initial Placement
		Rison	AR		BIOL_MAJ	BIOCHEM	Pharmacy School, Harding University
		Wilmar	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Pharmacy School, Harding University
		Star City	AR		BIOL_MAJ	BIOCHEM	Pharmacy School, UAMS
		Lamar	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Pharmacy School, UAMS
		Hermitage	AR		BIOL_MAJ	BIOCHEM	Pharmacy School, UAMS
		Bastrop	LA	5/20/2020	BIOL_MAJ	BIOCHEM	Pharmacy School, ULM
		Monticello	AR	5/20/2020	BIOL_MAJ	BIOCHEM	Dental School, UT-Memphis
		Hamburg	AR	5/7/2021	BIOCHEM	*BIOL	Dental School, AT Still, Missouri
			AR		Nat_Sci_Maj		Physical Therapy Asst, SouthArk
					Nat_Sci_Maj		Dental Hygiene, UAMS
		Truckee	CA	5/7/2021	BIOL_MAJ	BIOCHEM	Masters in Biology, Texas A&M
		Hamburg	AR	5/7/2021	BIOL_MAJ	BIOCHEM	ARCOM Masters of Biomedical Science
			AR	5/20/20	BIOL_MAJ	BIOCHEM	Chiropractic School, Logan
		Monticello	AR	5/7/2021	NAT_SCI_LS		MAT program, Dumas
		Monticello	AR	5/7/2021	MATH_MAJ		MAT program, Drew Central
		McGehee	AR	5/7/2021	NAT_SCI_LS		MAT program, ?
		DeWitt	AR		BIOL_MAJ		Nursing at JRMC

Math and Sciences Graduates July 1, 2020 – June 30, 2021

Last	First Name	City	St	Confer Dt	Acad Plan 1	Acad Plan 2	Initial Placement
		McGehee	AR	12/16/2020	BIOL_MAJ		Working as EMT; planning to apply to P.A. school
		Jonesboro	AR	12/16/2020	BIOL_MAJ		Works in seed genetics lab
		Star City	AR	12/16/2020	BIOL_MAJ	BIOCHEM	Applying to medical school, joining military
		Monticello	AR	12/16/2020	NAT_SCI_LS		Works in Accounting office, Dermott, AR
		Crossett	AR	12/16/2020	NAT_SCI_LS		

Last	First Name	City	St	Confer Dt	Acad Plan 1	Acad Plan 2	Initial Placement
		Hamburg	AR	5/7/2021	BIOCHEM		Dental School, AT Still, Missouri
		Crossett	AR	5/7/2021	BIOCHEM		Pharmacy School, ULM
		Warren	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Plans to apply to med school
		White Hall	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Plans to apply to med school
		Monticello	AR	5/7/2021	BIOL_MAJ		Applied for position at UAM
		Warren	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Medical School, UAMS
		Hamburg	AR	5/7/2021	BIOL_MAJ	BIOCHEM	ARCOM Masters of Biomedical Science
		Rison	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Plans to apply to med school
		Monticello	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Plans to apply to med school
		Rison	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Plans to apply to med school
		Lamar	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Pharmacy School, UAMS
		Mountain View	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Medical School, UAMS
		Wilmar	AR	5/7/2021	BIOL_MAJ	BIOCHEM	Pharmacy School, Harding University
		Stuttgart	AR	5/7/2021	BIOL_MAJ		Applying for positions with Ark Game & Fish
		Doniphan	MO	5/7/2021	BIOL_MAJ	BIOCHEM	Plans to apply to med school
		Truckee	CA	5/7/2021	BIOL_MAJ	BIOCHEM	Masters in Biology, Texas A&M
		Star City	AR	5/7/2021	BIOL_ORG		Employed at UAM
		Monticello	AR	5/7/2021	MATH_MAJ		MAT program, Teaching at Drew Central
		Monticello	AR	5/7/2021	MATH_MAJ		Financial aid analyst at UAM
		Monticello	AR	5/7/2021	MATH_MAJ		Employed at UAM
		Camden	AR	5/7/2021	NAT_SCI_LS		
		Monticello	AR	5/7/2021	NAT_SCI_LS		Employed at Dumas School District
		McGehee	AR	5/7/2021	NAT_SCI_LS		Teaching at?
		Oil Trough	AR	5/7/2021	NAT_SCI_LS		
		Star City	AR	6/28/2021	NAT_SC_LS		Applying to Occupational Therapy Schools
		Sheridan	AR	6/28/2021	NAT_SC_LS		

Revised February 8, 2018

Addendums

Addendum 1: UAM Vision, Mission, and Strategic Plan

VISION

The University of Arkansas at Monticello will be recognized as a model, open access regional institution with retention and graduation rates that meet or exceed its peer institutions.
Through these efforts, UAM will develop key relationships and partnerships that contribute to the economic and quality of life indicators in the community, region, state, and beyond.

MISSION

The University of Arkansas at Monticello is a society of learners committed to individual achievement by:

- Fostering a quality, comprehensive, and seamless education for diverse learners to succeed in a global environment;
- Serving the communities of Arkansas and beyond to improve the quality of life as well as generate, enrich, and sustain economic development;
- Promoting innovative leadership, scholarship, and research which will provide for entrepreneurial endeavors and service learning opportunities;
- Creating a synergistic culture of safety, collegiality, and productivity which engages a diverse community of learners.

CORE VALUES:

- *Ethic of Care*: We care for those in our UAM community from a holistic perspective by supporting them in times of need and engaging them in ways that inspire and mentor.
- *Professionalism*: We promote personal integrity, a culture of servant leadership responsive to individuals' needs as well as responsible stewardship of resources.
- *Collaboration*: We foster a collegial culture that encourages open communication, cooperation, leadership, and teamwork, as well as shared responsibility.
- *Evidence-based Decision Making*: We improve practices and foster innovation through assessment, research, and evaluation for continuous improvement.

- *Diversity*: We embrace difference by cultivating inclusiveness and respect of both people and points of view and by promoting not only tolerance and acceptance, but also support and advocacy.

UAM STUDENT LEARNING OUTCOMES:

- *Communication:* Students will communicate effectively in social, academic, and professional contexts using a variety of means, including written, oral, quantitative, and/or visual modes as appropriate to topic, audience, and discipline.
- *Critical Thinking:* Students will demonstrate critical thinking in evaluating all forms of persuasion and/or ideas, in formulating innovative strategies, and in solving problems.
- *Global Learning:* Students will demonstrate sensitivity to and understanding of diversity issues pertaining to race, ethnicity, and gender and will be capable of anticipating how their actions affect campus, local, and global communities.
- *Teamwork:* Students will work collaboratively to reach a common goal and will demonstrate the characteristics of productive citizens.

STRATEGIC PLAN

1. STUDENT SUCCESS—fulfilling academic and co-curricular needs

- Develop, deliver, and maintain quality academic programs.
  - Enhance and increase scholarly activity for undergraduate and graduate faculty/student research opportunities as well as creative endeavors.
  - Revitalize general education curriculum.
  - Expand academic and degree offerings (technical, associate, bachelor, graduate) to meet regional, state, and national demands.

- Encourage and support engagement in academics, student life, and athletics for well-rounded experience.
  - Develop an emerging student leadership program under direction of Chancellor's Office.
  - Enhance and increase real world engagement opportunities in coordination with ACT Work Ready Community initiatives.
  - Prepare a Student Affairs Master Plan that will create an active and vibrant student culture and include the Colleges of Technology at both Crossett and McGehee.

- Retain and recruit high achieving faculty and staff.
  - Invest in quality technology and library resources and services.
  - Provide opportunities for faculty and staff professional development.
  - Invest in quality classroom and research space.
  - Develop a model Leadership Program (using such programs as American Council on Education, ACE and/or Association of American Schools, Colleges, and Universities, AASCU) under the direction of the Chancellor's Office to grow our own higher education leaders for successive leadership planning.
  - Create an Institute for Teaching and Learning Effectiveness.

- Expand accessibility to academic programs.
  - Engage in institutional partnerships, satellite programs, alternative course delivery, and online partnerships with eVersity.
  - Create a summer academic enrichment plan to ensure growth and sustainability.
  - Develop a model program for college readiness.
  - Revitalize general education.
  - Coordinate with community leaders in southeast Arkansas to provide student internships, service learning, and multi-cultural opportunities.

2. ENROLLMENT and RETENTION GAINS

- Engage in concurrent enrollment partnerships with public schools, especially in the areas of math transition courses.

- Provide assistance and appropriate outreach initiatives with students (working adults, international, transfers, and diversity) for successful transition.
- Coordinate and promote marketing efforts that will highlight alumni, recognize outstanding faculty and staff, and spotlight student success.
- Develop systematic structures for first year and at-risk students.
  Identify and enhance pipeline for recruiting.

3. INFRASTRUCTURE REVITALIZATION and COLLABORATIONS

- Improve Institutional Effectiveness and Resources through participation in a strategic budget process aligned with unit plans and goals for resource allocations.

- Conduct and prepare Economic Impact Studies to support UAM efforts and align program and partnerships accordingly.

- Prepare and update University Master Plan.

- Partner with system and state legislators to maximize funding.

- Increase external funding opportunities that will create a philanthropic culture among incoming students, graduates, and community.
  - Increased efforts to earn research and grant funds.
  - Creation of philanthropic culture among incoming students, graduates and community.
    - Collaborating with Athletics Fundraising to maximize synergies.
    - Create a Growing our Alumni Base Campaign.
  - Encourage entrepreneurial opportunities where appropriate.
  - Participation in articulation agreements to capitalize on academic and economic resources.
  - Partner with communities to address the socio economic, educational, and health and wellness (safety needs) of all citizens.

Addendum 2: Higher Learning Commission Sample Assessment Questions

1. How are your stated student learning outcomes appropriate to your mission, programs, degrees, students, and other stakeholders? How explicitly do major institutional statements (mission, vision, goals) address student learning?

- How well do the student learning outcomes of programs and majors align with the institutional mission?

- How well do the student learning outcomes of general education and co-curricular activities align with the institutional mission?
- How well do course-based student learning outcomes align with institutional mission and program outcomes?
- How well integrated are assessment practices in courses, services, and co-curricular activities?
- How are the measures of the achievement of student learning outcomes established? How well are they understood?

2. What evidence do you have that students achieve your stated learning outcomes?

- Who actually measures the achievement of student learning outcomes?
- At what points in the curriculum or co-curricular activities are essential institutional (including general education), major, or program outcomes assessed?
- How is evidence of student learning collected?
- How extensive is the collection of evidence?

3. In what ways do you analyze and use evidence of student learning?

- Who analyzes the evidence?
- What is your evidence telling you about student learning?
- What systems are in place to ensure that conclusions are drawn and actions taken on the basis of the analysis of evidence?
- How is evidence of the achievement of student learning outcomes incorporated into institutional planning and budgeting?

4. How do you ensure shared responsibility for student learning and assessment of student learning?

- How well integrated are assessment practices in courses, services, and co-curricular activities?
- Who is responsible for the collection of evidence?
- How cross-functional (i.e., involving instructional faculty, Student Affairs, Institutional
- Research, and/or relevant administrators) are the processes for gathering, analyzing, and using evidence of student learning?
- How are the results of the assessment process communicated to stakeholders inside and outside the institution?

5. How do you evaluate and improve the effectiveness of your efforts to assess and improve student learning?

- What is the quality of the information you have collected telling you about your assessment processes as well as the quality of the evidence?
- How do you know how well your assessment plan is working?

6. In what ways do you inform the public about what students learn—and how well they learn it?

- To what internal stakeholders do you provide information about student learning?
- What is the nature of that information?
- To what external stakeholders do you provide information about student learning?
- What is the nature of that information?

Addendum 3: Arkansas Productivity Funding Metrics

- The productivity funding formula consists of four categories: Effectiveness (80% of formula), Affordability (20% of formula), Adjustments, and Efficiency (+/-2% of formula).

Effectiveness	Affordability	Adjustment	Efficiency
• Credentials • Progression • Transfer Success • Gateway Course Success	• Time to Degree • Credits at Completion	• Research (4-year only)	• Core Expense Ratio • Faculty to Administrator Salary

Addendum 4: Assessment Data from specific courses

Advanced Lab Techniques – Oral Communication

All chemistry majors must either take Chemistry Seminar, Advanced Lab Techniques (which has an embedded seminar), or take part in a Senior Research course that leads to a presentation at a professional meeting. Typically, more students take the Advanced Lab Techniques course than the other two options; however, this year only two students enrolled in that course. The students were given the charge of selecting a topic that falls into a specific category. This year's category was chemical instrumentation. The students took approximately two months to research their topics, develop Powerpoint slides, and present the seminar. Each chemistry faculty member ranked the presentation

	Capstone ***4***	**Milestones 3**	**Milestones 2**	**Benchmark 1**	**Not Met 0**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.	Not meeting dimensional requirement for Benchmark 1.

Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience	Not meeting dimensional requirement for Benchmark 1.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable	Not meeting dimensional requirement for Benchmark 1.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Not meeting dimensional requirement for Benchmark 1.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced, but is not explicitly stated in the presentation.	Not meeting dimensional requirement for Benchmark 1.

When the faculty submitted their initial evaluation according to the rubric, all were extremely similar. On portions with different scores, the faculty discussed the rankings and arrived at a consensus. All faculty were pleased with the performance of the students in the spring 2021 class. In the past, it wasn't uncommon for at least one student to be asked to repeat their seminar presentation to the faculty. Typically, the underperforming students didn't do well in the Organization, Delivery, and Supporting Material portions.

Oral Communication Value Rubric Performance Rankings

Student Identifier	A	B
Portion of Rubric	Level of	Performance
Organization	3	4
Language	3	3
Delivery	4	3
Supporting Material	3	3
Central Message	4	4

Organic Chemistry – Critical Thinking

Organic Chemistry is often considered to be one of the more difficult courses on a college campus, largely because of the amount of information involved, and the fact that much of the information is new to every student in the course. The entire course utilizes critical thinking skills; however, the area used for this assessment was spectroscopic data interpretation to determine the structure of an unknown compound. NMR, IR, UV, and Mass Spectroscopy are commonly used to identify organic compounds. These topics are not covered in any earlier courses, so every student is starting at ground zero in terms of content knowledge. The students with stronger critical thinking skills figure out the logic behind the process easily and advance more quickly.
There were 12 students assessed using spectral identification quizzes, worksheets, and exam questions from exam 1 and the final exam.

	Capstone 4	**Milestones 3**	**Milestones 2**	**Bench mark I**	**Not Met 0**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding 0 students at this level	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions. 6 Students at this level	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown. 3 students at this level	Issue/ problem to be: considered critically is stated without clarification or description. 3 Students at this level	Not meeting dimensional requirement for Benchmark 1. Zero students at this level

Evidence *Selecting and using information to investigate a point of view or conclusion.*	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly. 1 student at this level	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning 4 students at this level	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning. 3 Students at this level	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question. 3 Students at this level	Not meeting dimensional requirement for Benchmark 1. 1 student at this level
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position. Zero students at this level	Identifies own and others' assumptions and several relevant contexts when presenting a position. 5 students at this level	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa). 3 students at this level	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position. 4 students at this level	Not meeting dimensional requirement for Benchmark 1. Zero students ranked at this level
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others'	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective,	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.	Not meeting dimensional requirement for Benchmark 1.

	points of view are synthesized within position (perspective, thesis/ hypothesis). Zero students at this level	thesis/ hypothesis). 5 students at this level	3 students at this level	4 students at this level	Zero students at this level
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order. 1 student at this level	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly. 4 students at this level	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly. 3 students at this level	Conclusion is inconsistently tied to some of the information discussed, related outcomes (consequences and implications) are oversimplified. 3 students at this level	Not meeting dimensional requirement for Benchmark 1. 1 student at this level

Notes: The one student ranked at level 4 (Capstone) in two categories went on to score one of the highest overall grades in the course, and also scored the highest grade on the American Chemical Society standardized comprehensive final exam. He was a May 2021 graduate. As a graduating senior taking the course, it is reasonable to say that the extra experience in college and maturity level would make him better in this category. The one student that rated 0 (Not Met) in two categories scored an overall course grade of F and did not take the final exam. All of the final grades of A scored a 2, 3, or 4 in every category of the critical thinking assessment. Based on comparisons of grades to previous years students, this class was better than average; although this group did not have the student that scored outstandingly well on the American Chemical Society standardized comprehensive final exam as seen in previous years. This year, 3/12 students scored above national average for the ACS exam. Two students scored just below national average, and 7/12 were somewhat below national average on the final exam. Overall, it was a disappointing performance on the externally written final exam.

Calculus II and III 2020-21-Critical Thinking

Both Calculus II and Calculus II courses were selected for assessment for Critical Thinking. Calculus II was a fall 2020 course, and Calculus III was a spring 2021 course. As usual, the enrollment in the two courses were identical so direct comparisons can be made for each student over the year. Each student carried the same identifier throughout the assessment of the two courses. The rankings were made by the course instructor, and were based on

homework assignments and follow-up class discussions. Every assignment had a critical thinking task included on it that was the lead-in for class. The tasks ranged from approaching a known question from a new perspective to searching and/or developing methods to address a novel task. Students were rated using the Critical Thinking rubric.

	Capstone 4	**Milestones 3**	**Milestones 2**	**Benchmark I**	**Not Met 0**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be: considered critically is stated without clarification or description.	Not meeting dimensional requirement for Benchmark 1.
Evidence *Selecting and using information to investigate a point of view or conclusion.*	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.	Not meeting dimensional requirement for Benchmark 1.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.	Not meeting dimensional requirement for Benchmark 1.

Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.	Not meeting dimensional requirement for Benchmark 1.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed, related outcomes (consequences and implications) are oversimplified.	Not meeting dimensional requirement for Benchmark 1.

Ratings for Calculus II

Critical Thinking Rubric Student Identifier	A	B	C	D
Portion of Rubric	Level	Of	Performance	Cont'd
Explanation of Issues	2	2	1	2
Evidence	1	2	1	1
Influence of context and assumptions	2	2	1	1
Student's position	2	2	1	1
Conclusions and related outcomes (implications and consequences)	2	2	1	2

Ratings for Calculus III

Critical Thinking Rubric Student Identifier	A	B	C	D
Portion of Rubric	Level	Of	Performance	Cont'd
Explanation of Issues	3	3	2	2
Evidence	2	3	2	2
Influence of context and assumptions	3	3	1	2
Student's position	3	3	2	2
Conclusions and related outcomes (implications and consequences)	2	3	2	2

Two of the students rating improved by one level in every category. Two students did remain the same as the previous semester in at least one category. In discussions with the instructor, it was determined that even those students showed improvements in those categories; however, the improvement was not enough to justify improving the ranking to the next level. It was interesting that the assessment rankings didn't appear to be directly related to course grades in this instance. All four of the students scored a C in Calculus III; however, were rated quite differently on the homework related tasks. As you might expect, two of the students were high C's and two others had lower average scores. We were happy to see that based on the rubric there was growth by all students from Calculus II to Calculus III. In the future we hope to compare students that don't take the course in successive semesters to see if there is a fall-off in critical thinking skills.

General Chemistry I Lab – Teamwork

In General Chemistry I Lab, several of the labs are done as pairs, or occasionally in larger teams. A few labs are done individually. It provides a great opportunity to observe freshmen and maybe a few sophomores interacting. Much of this assessment is done as instructor observation; however, the instructor did ask specific questions to gather student's feelings about working as a team. In the laboratory setting, the instructor felt that based on personality and prior knowledge of the subject area, there were definitely leaders and followers. Some were obviously more comfortable working as part of the team than others.

	Capstone 4	**Milestones 3**	**Milestones 2**	**Bench mark I**	**Not Met 0**
Contributes to Team Meetings	Helps the team move forward by articulating the merits of alternative ideas or proposals.	Offers alternative solutions or courses of action that build on the ideas of others.	Offers new suggestions to advance the work of the group .	Shares ideas but does not advance the work of the group.	Not meeting dimensional requirement for Benchmark 1.

Facilitates the Contributions of Team Members	Engages team members in ways that facilitate their contributions to meetings by both constructively building upon or synthesizing the contributions of others as well as noticing when someone is not participating and inviting them to engage.	Engages team members in ways that facilitate their contributions to meetings by constructively building upon or synthesizing the contributions of others.	Engages team members in ways that facilitate their contributions to meetings by restating the views of other team members and/or asking questions for clarification.	Engages team members by taking turns and listening to others without interrupting.	Not meeting dimensional requirement for Benchmark 1.
Individual Contributions Outside of Team Meetings	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project. Proactively helps other team members complete their assigned tasks to a similar level of excellence.	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project.	Completes all assigned tasks by deadline; work accomplished advances the project.	Completes all assigned tasks by deadline.	Not meeting dimensional requirement for Benchmark 1.
Fosters Constructive Team Climate	Supports a constructive team climate by doing all of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to	Supports a constructive team climate by doing any three of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates	Supports a constructive team climate by doing any two of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions,	Supports a constructive team climate by doing any one of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by	Not meeting dimensional requirement for Benchmark 1.

	accomplish it. • Provides assistance and/or encouragement to team members.	teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.	and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.	expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members,	
Responds to Conflict	Addresses destructive conflict directly and constructively, helping to manage/resolve it in a way that strengthens overall team cohesiveness and future effectiveness.	Identifies and acknowledges conflict and stays engaged with it.	Redirecting focus toward common ground, toward task at hand (away from conflict).	Passively accepts alternate viewpoints/ideas/opinions.	Not meeting dimensional requirement for Benchmark 1.

Teamwork Rubric / Student Identifier	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Portion of Rubric	L	E	V	E	L		Of		PER	FOR	MA	N	C	E
Contributes to team meetings	2	2	1	2	1	2	2	2	1	2	1	1	2	2
Facilitates the contribution of team members	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Individual contributions outside of team meetings	2	2	2	2	1	2	2	2	1	2	1	1	2	2
Fosters constructive team climate	1	1	1	1	1	2	2	1	1	2	1	1	2	2
Responds to conflict	1	1	1	1	1	1	1	1	1	1	1	1	1	1

With General Chemistry I Lab being a freshman level course that is largely populated by freshmen and sophomores, it isn't surprising to see that all of the students ranked at Benchmark 1 or Milestone 2. It was somewhat surprising that no students rated a zero in which the benchmark wasn't met. The lab setting doesn't provide situations where a lot of conflict arises, so that portion of the rubric was likely not accurately measured. Students often passively accepted other team member's ideas. The instructor felt that students that rated at level 1 in most categories were very apathetic toward learning the material. It's impossible to tell whether a student is lacking in teamwork skills or simply doesn't care about what is going on around them.