

Annual Assessment Report

2010-2011

School of Mathematical and Natural Sciences

This assessment report is available through the School homepage at
http://www.uamont.edu/Math_and_Sciences/annualreports.htm.

August 5, 2011

1. What are the Student Learning Outcomes (SLOs) for your unit? How do you inform the public and other stakeholders (students, potential students, the community) about your SLOs? If your unit is accredited by an outside source, please attach the letter verifying your accreditation.

A student who graduates from UAM with a major administered by the School of Mathematical and Natural Sciences should:

1. Be able to clearly express mathematical and/or scientific ideas in oral and written communication;
2. Be able to demonstrate the ability to apply scientific and/or mathematical concepts to real world situations;
3. Have a core knowledge of the major discipline;
4. Be prepared for immediate employment in a scientific, technical, medical, or educational environment;
5. Be prepared to enter graduate or professional school in the appropriate area.

The Student Learning Outcomes (SLOs) are measured through student performance on exams, quizzes, laboratory exercises, field course journals, homework assignments, research projects, reports, and/or presentations.

The Student Learning Outcomes are posted on the School of Mathematics and Natural Science website at: http://www.uamont.edu/Math_and_Sciences/learningoutcomes.htm

External Accreditations: None

2. Describe how your unit’s Student Learning Outcomes fit into the mission of the University.

The following table shows the relationship between the School of Mathematics and Natural Sciences Student Learning Outcomes with the UAM Mission Statement.

UAM MISSION STATEMENT	Math and Science Learning Outcomes
<p>The mission the University of Arkansas at Monticello shares with all universities is the commitment to search for truth, understanding through scholastic endeavor.</p>	1,2,3
<p>The University seeks to enhance and share knowledge, to preserve and promote the intellectual content of society, and to educate people for critical thought.</p>	2, 3
<p>The University provides learning experiences that enable students to synthesize knowledge, communicate effectively, use knowledge and technology with intelligence and responsibility, and act creatively within their own and other cultures.</p>	1, 2, 3
<p>The University strives for excellence in all its endeavors. Educational opportunities encompass the liberal arts, basic and applied sciences, selected professions, and vocational/technical preparation. These opportunities are founded in a strong program of general education and are fulfilled through contemporary disciplinary curricula, certification programs, and vocational/technical education or workforce training. The University assures opportunities in higher education for both traditional and non-traditional students and strives to provide an environment that fosters individual achievement and personal development.</p>	4, 5

3. Provide an analysis of the learning data from your unit. How is this data used as evidence of learning.

The School of Mathematical and Natural Sciences uses performance in the classroom and laboratory to measure student comprehension. Multiple exams are given in each course, and in many courses a comprehensive final exam is given. Homework, quizzes, lab notebooks, field journals, research papers, and oral presentations are also graded in several courses. In the School of Mathematical and Natural Sciences, grades are given almost entirely based on student performance, not attendance and other elements that are unrelated to the student’s ability to successfully complete the learning objectives at the

course level. The course objectives for each course are based on common syllabi adopted by the state, comparison with courses at other universities, the specific course content required by professional and graduate programs, and for the case of chemistry, the American Chemical Society. Even though our chemistry program is not accredited by the ACS, their internationally recognized model is followed as closely as possible.

Pre-tests and Post-tests

Although no courses in the School of Mathematical and Natural Sciences use a pre-test to compare scores with the same exam after the semester is completed, the remedial math courses use the ACT as a placement exam (i.e. the pre-test) and uses the ASSET exam as the end of course exam for Intermediate Algebra, which is deemed equivalent to the ACT in score comparison (the post-test). The exams were officially given for the first time in Fall 2010; however, we gave the exams at the end of courses in Spring and Summer 2010 in order to gather preliminary data. The exams from Spring and Summer were not used in grade calculation while in Fall 2010 and Spring 2011 they were used as part of the grading scheme in calculating the overall grade in those courses. In the fall, it was thought that ADHE had mandated that passing the ASSET exam was to be indicated with a grade of C in the Intermediate Algebra course, so there was a much higher success rate reported in Fall 2010. The success rate shown is really a success rate of those passing the class or the ASSET exam. That was corrected for the Spring 2011 group. The class grade reflects only performance in the course, not whether or not the student passed the ASSET exam.

In the Fall 2010 Intermediate Algebra courses, 262 were students enrolled. These students were placed in this course by virtue of having less than 19 on the math portion of the ACT. Those with less than 17 on the math portion of the ACT had completed Introductory Algebra with a C or better in the prerequisite course. Of the 262 original enrollees, 127 took the ASSET end of course exam. Of the 127 which took the exam, 106 passed the exam with a scaled score of 39 or higher (ASSET score of 39 is equivalent to ACT of 19 on the math portion of the exam). With 83% of the students taking the exam scoring high enough to move to College Algebra, it is apparent that there was a significant improvement in math skills among the course completers. Of the students passing the ASSET exam, 53 moved on to College Algebra simply by virtue of the ASSET score, and not their performance throughout the course. Of those 53 students that moved on to College Algebra in the Spring 2011 term, 24 passed with a D or better (0 A's, 5 B's, 6 C's, 13 D's, 18 F's, and 11 W's). Twenty seven (27) students took College Algebra in Spring 2011 in on-campus sections of with a passing grade on the ASSET and a passing grade in Intermediate Algebra prior to the ASSET exam. Of these students, 21 passed College Algebra with a D or higher (4 A's, 4 B's, 11 C's, 2 D's, 2 F's, and 4 W's). Regardless of the ASSET score, it is clear that students that are successful completers of the Intermediate Algebra course with C or above are more likely to be successful in College Algebra, both in terms of overall pass rate, and higher grades of those that pass.

In the Spring 2011 On Campus Intermediate Algebra courses, 181 students enrolled, with 96 students taking the ASSET end of course exam (53% completion rate). Data is not complete on off-campus courses at this time. There were 40 students who passed the course with a C, with 35 scoring higher than the 19 ACT math equivalent score on the ASSET. There were 30 who passed with the 19 ACT equivalent score on the ASSET that did not pass the course with a C or higher. By virtue of the exam score, they can move on to College Algebra; however, if the results are similar to the Fall 2010 Intermediate Algebra students, those students have a lower chance of passing the College Algebra

course than those that passed the Intermediate Algebra course with C or higher. Those that do pass will likely pass with a lower grade as well. These students will be tracked in future math courses and the results included in future assessments. Despite our overall low pass rate in remedial and freshmen level math courses, UAM has approximately 75% of the course completers in Intermediate Algebra passing the ASSET exam with a high enough score to move on to College Algebra. ADHE claims their data is not accurate and will not release the information on other schools. Several schools released their pass rates at the Arkansas Math Chairs Meeting in May. Some schools had single digit pass percentages. The representatives from ADHE, Moten and Wheeler, were extremely pleased with our pass rate. See Appendix A for grade distributions in Intro, Intermediate, and College Algebra with all on-campus ASSET data included. Available off campus data has been included.

Performance on National Exams

Two Chemistry courses, General Chemistry II and Organic Chemistry II, use the American Chemical Society Standardized Final Examination prepared by the ACS Testing Institute. The ACS provides national comparison data for all schools using the exams. These exams are very rigorous and thorough. This year, the Organic Chem II students scored at the 53rd percentile nationally, as a class average. This makes 14 of 18 years that the Organic Chem II students have scored at or above national average on this exam. When examining item analysis for the exams, there are no clear trends on what topics are missed most on the exam. Slightly more students miss questions on multi-step organic synthesis than the other questions, but this expected since these questions are more difficult and require far more critical thinking skills than the questions related to nomenclature or physical properties of organic compounds. Although we are proud of UAM's performance on this exam, we need to use this information appropriately since we typically have only 12-15 students completing the Organic Chem II course, even though we may start with 30-36 students at the beginning of Organic Chem I. We are looking at the best students of a very small group that have already successfully completed Gen Chem I and II and are typically good students as a whole, but this should be the case at all universities.

In General Chemistry, the ACS final exam scores have declined over the past few years (42nd percentile in 2010, 45th percentile in 2009, 49th percentile in 2008). This year there was a slight rebound, scoring 45th percentile as a class average. The decline in the test scores over the past few years is partially attributed to the decline in the number of chemistry majors in these courses. Only one traditional chemistry major has graduated in the past two years; however, there have been approximately ten Biology/Chemistry (Biochemistry Option) double majors during that time. Even though they earn the Biochemistry Option Chemistry degree, they typically are students that are interested in attending medical school and are usually much stronger in biology than in chemistry courses.

Admissions Exams

Since many School of Mathematical and Natural Sciences students are seeking admission into medical, dental, or pharmacy school, we often use those exams as a measure of program quality.

During the past year, four students reported Medical College Admissions Test (MCAT) scores back to UAM. The exam has sections in biological sciences, physical sciences, and verbal. Each section is worth a possible 15 points each. There is also a writing sample which is ranked on a letter scale from K to T with T being the best and a score with O being national average. The scores for the four students ranged from 22 to 32 out of 45. Three scores, 22, 23, and 24 were slightly below the 50th percentile nationally, while the 32 was well above the national average. Oddly enough, the 23 and 24 were

accepted into medical programs, while the highest score and the lowest score were not accepted. Over the past few years, UAM students typically score below average in both the verbal and writing sections, and very near average in both biological and physical sciences; however, this can vary greatly from student to student. The MCAT scores are shown in Appendix B.

Several students took the PCAT exam in the past year with scores ranging from 26 to 77 on a 100 point scale. The exam has subscores for verbal, biology, reading comprehension, quantitative ability, and chemistry. There is also a writing score based on a 5 point scale. There is also no calculator allowed on this exam even though calculations are done in both the quantitative and chemistry sections. Over the past 4 years, UAM students have scored higher on the Chemistry, Biology, and Reading Comprehension portions of the exam, averaging 54, 57, and 57 respectively, out of 100 on each. The verbal section has always been a problem for UAM students, averaging 45 out of 100 over the last four years. Students who are lifelong readers typically perform well. Students who are not lifelong readers score poorly, and very little can be done in the short term to improve this score. In the past, UAM students scored fairly well on the quantitative section of the PCAT scoring approximately 54 out of 100; however, in the past three years there have been major changes in the quantitative section. Calculus has always been a minor part of the quantitative section, but is now a major portion of the exam. Our scores on this section have dropped to an average score of 45 out of 100. Much of this decline is attributed to the students using old study guides, which have little to no calculus review, to prepare for the PCAT. In private conversations with the UAMS College of Pharmacy faculty and staff at the annual advisors meeting, we were told that UAM students are as well prepared as students from any other university. One faculty member stated that our students tend to be above average in their organic chemistry background as compared to other students in their class. When asked if UAM students were lacking in any specific areas, the faculty member replied, "I don't see any weaknesses across the board; however, there are some UAM students that have struggled in specific courses, but the trend is not a general one." He went on to say that he felt every student accepted from UAM has been a quality student and deserved to be there. The students that have run into trouble were really due to outside factors such as family problems, illness, and financial issues. This year's class had five students apply. All five were accepted, with two students being accepted to multiple universities.

The single DAT score reported to UAM was near national average in most areas with an exceptional score on the organic chemistry portion of the exam. Despite the student having a 63rd percentile overall national ranking, a very good GPA, and excellent committee evaluations, the student was not even granted an interview at UT-Memphis College of Dentistry. In the past, UAM has had an excellent relationship with that school; however, the untimely death of their Dean of Admissions has greatly changed the relationship that all Arkansas institutions have with that program. It appears that acceptance into dental programs is going to be extremely difficult in the future.

No Math and Science students have reported GRE examination scores in the past twelve months.

Capstone Courses

Biology, chemistry, and mathematics all have a capstone course requirement. Respectively these courses are BIOL 4741, Biology Seminar; CHEM 4611, Chemistry Seminar, or CHEM 4691, Senior Research, or CHEM 4742, Advanced Laboratory Techniques; and MATH 4711, Mathematics Seminar. Students research a topic, utilizing information from both the library and their own class and laboratory experiences. The students must write a research paper and do an oral presentation, either locally or at a

professional meeting. All chemistry faculty are involved in the grading of the papers and oral presentations. In the past year, five students did papers and presentations in Advanced Lab Techniques. Of the five students, the faculty felt that three of the students met the student learning outcomes at the excellent level. Two students did not do as well on their papers and presentation; however all faculty felt that the two students demonstrated knowledge and skills that are satisfactory to meet the student learning outcomes.

Three students in Chemistry did presentations at professional meetings. In each case, the students' preparation of the research poster or oral presentation was excellent. All demonstrated successful accomplishment of student learning outcomes.

Name	Meeting	Title
Joshua Hathcox	Joint SE and SW regional meeting of the American Chemical Society	Nitrate and Nitrite Levels in Fresh Spinach
Misty Jager	NASA-Arkansas Space Grant Consortium Annual Symposium	Method Preparation for the Determination of Fatty Acid in Native Arkansas Algae
Samual Pope	NASA-Arkansas Space Grant Consortium Annual Symposium	A Simple Method for Determination of Nitrate and Nitrite Contents in Leafy Vegetables.

In Mathematics, three students took the capstone course, Mathematics Seminar. The students in the course must write a research paper and perform an oral presentation, demonstrating knowledge and understanding in a specific area of mathematics. One student performed at the excellent level, one student was above average, and the third student was struggling to demonstrate knowledge of the subject area. When asked to do major revisions on the research paper, the student elected to drop the course. The mathematics faculty felt that the two students that completed the course showed successful competency in the subject and exceeded the student learning outcomes.

Biology Seminar is used as the capstone course for the Biology major. Seven students completed the course in Spring 2011. Six of the seven performed at the excellent level on the written research paper and oral presentations. The seventh performed at the satisfactory level.

Three biology majors were involved with research projects that ended with the presentation of their results at professional meetings. The biology faculty felt that all students performed exceptionally well in preparing the written product and also did very well with the presentations. They felt all demonstrated excellent knowledge of the material. The presentations are listed below:

Name	Meeting	Title
Chris Ellington	Louisiana Academy of Science and the Alpha Chi National Meeting	Reproductive Cycle of Baird's Pocket Gopher
Nathan Probst	Arkansas Academy of Sciences and NASA-Arkansas Space Grant Consortium	Diversity of Freshwater Eustigmatophyceae
Joseph Lockwood	Alpha Chi National Convention	Effects of ATV's on Mussells in the

4. Based on your analysis of student learning data in Question 3, include an explanation of what seems to be improving student learning and what should be revised.

With the increased attention on remedial courses and the partial implementation of ACT 971 requiring end of course national testing be used to progress to college algebra, several improvements have been made in the Introduction to Algebra and Intermediate Algebra courses. With the pass rates historically being very low, see Appendix A, several faculty looked into the possibility of developing in-house texts that would be less theoretical and written as more of a “how to” instructional guide. Mr. Lowell Lynde wrote the in-house published text for Intermediate Algebra and developed the connections with the ALEKS (Assessment and Learning in Knowledge Spaces) software that is used for homework, practice, and pre-test assessment. A student who shows a high level of mastery of an ALEKS course will be successful in the actual course he or she is taking. The faculty have monitored the ALEKS hourly usage, and have found that the students who spend the greatest amount of time on the programs do perform better on the exams. Even though the course pass statistics have not increased dramatically, it does appear that the students are learning the material. Essentially every student passing Intermediate Algebra with a C or better passes the end of course ASSET exam. Even a few students that are not passing the course are achieving a passing score on the ASSET exam, which allows them to progress to College Algebra if they choose. It also should be noted that the students who do not spend the appropriate amount of time on the ALEKS practice and homework segments typically do not do well on the exams. Based on this, the large number of drops and F’s in Intermediate Algebra are partly attributed to lack of effort by the students.

Introduction to Algebra went through similar changes with an in-house written text, and coupling with ALEKS. Ms. Victoria Ryburn developed the text and worked closely with the advisors from ALEKS to put together a package suitable for UAM students. The package is far cheaper than the previous textbook, and like Intermediate Algebra, the students can do on-line homework and practice for exams. It’s built in assessment lets the students know which topics they have mastered. Results similar to those found in Intermediate Algebra have been found, with those putting in more time being far more successful than those that are putting less or no time. In Introduction to Algebra there isn’t a nationally normed end of course examination as there is in Intermediate Algebra; however, a team written comprehensive final examination is given. Typically about 40% of the students that complete the course (i.e. takes the final) pass with a grade of C or higher. Based on number of students who start the term, the success rate is typically around 20% passing with a C or higher. Hopefully the computerized tutoring, practice questions, and assessment will bring up the pass rate in the future. It is also hoped that we can greatly reduce the class sizes of the remedial courses to approximately 20-25 students with the hope that more one-on-one time will give a higher success rate.

Because of the ASSET test, some course content has been moved around between the Intro, Intermediate, and College Algebra courses. A few topics that were not covered on the ASSET exam were moved to College Algebra, while topics normally found in College Algebra, like solving systems of linear equations, were moved to Intermediate Algebra because they were on the ASSET exam. This fall some of the fundamental operations with polynomials will be moved to Introduction to Algebra along with graphing of systems of linear equations so that the gap between Introduction and

Intermediate Algebra won't be so large in terms of content difficulty. This will also allow more time to be spent on the topics in Intermediate Algebra, and therefore, hopefully increasing the pass rate.

In General Chemistry, there are so many topics that have been expanded over the years that it is difficult, if not impossible, to give complete coverage of all topics that are included on the ACS National Exam. The Chemistry faculty at UAM chose many years ago to teach the basics, as seen in the chemistry syllabi in Appendix C, and essentially not cover the specialty chapters (organic chemistry, coordination chemistry, biochemistry, and polymer chemistry) near the end of General Chemistry II. In the past few years, we have brought more organic chemistry into the course, but have not included the others simply due to lack of time available. Those topics are covered in later chemistry courses. Our students score fairly well (near national average) on the ACS final despite missing a few questions from the specialty topics. We do use a slight curve on the final exam to make up for not covering those topics. Periodically, the Chemistry faculty reviews the item analysis from the final exam and considers tweaking the course content to improve one section over another. Very small changes are made because spending additional time on one topic takes time away from another.

Relatively few changes are made to our courses or programs based on performance on the professional exams such as the PCAT or MCAT exam. The scores on those exams are affected by many variables other than course content knowledge. Some of these factors are: reading speed and comprehension, tendency to do well on standardized exams, and the amount of review time spent on each subject before the exam. The faculty and staff at UAMS do tell us that students that complete our programs perform well in their programs. They also indicate that students that take equivalent courses at less rigorous institutions typically do not do as well in their programs.

In the capstone courses there are changes made periodically. While some are made to suit the instructor for that particular term, other changes have been assessment driven. For instance, the year after Advanced Laboratory Techniques was implemented, the Chemistry faculty felt that not enough emphasis was placed on the research paper, and too much emphasis was placed on the specialty techniques being taught. We changed the emphasis to be much higher on the written paper and seminar, and since that time, there has been a major improvement on the performance in those areas. This year, the student output was very good. The students are still exposed to specialty lab techniques and instrumentation that they are likely to see in graduate school or in the workplace; however, we are not covering that material at the same depth as before.

Students are very much encouraged to present their research findings at regional and national meetings. We have made more funding available for student travel so that more students can participate in professional meetings. Four years ago, we rarely had students presenting at meetings. This year we have had several seniors, as well as some underclassmen not mentioned in question 3 above, do presentations.

5. Other than course level/grades, describe/analyze other data and other sources of data whose results assist your unit to improve student learning.

The School of Mathematical and Natural Sciences uses a variety of other measures to assess the quality of our programs. These measures include job/graduate school initial placement, senior exit surveys, alumni surveys, and student evaluations. We rarely get information back from employers; however, we

verbally get very general information back from professional schools and graduate programs. This information is intentionally very general in order to not violate FERPA laws.

When reviewing the Math and Science graduates over the last several years, many of the students have been very successful in their initial placement. Several students have attended graduate school or a professional school, others have found positions in industry, while others, especially in mathematics, have chosen to enter the field of education. Essentially every medical school applicant from UAM over the last ten years has been accepted. The pharmacy acceptance rate is near 75% during that same period of time. Applicants to dental school programs have been slightly less successful, at 50%, mainly due to the fact that our students must apply to out of state programs. See Appendix D for initial placement information of Math and Science graduates over the last 5 years.

Most graduating seniors take part in exit interviews with the Dean of Math and Sciences. See Appendix E for a list of typical questions asked. The students are typically very positive about their experience at UAM. The most common positive statements usually are geared toward how a specific instructor made a difference in their education. Several students are very appreciative of the Math and Science scholarships they receive. There are very few negative comments about our programs; however, there is the occasional complaint about specific instructors. Several mention the condition of equipment and the labs as weaknesses.

Alumni surveys are often sent out with newsletters mailings, and by email to the alumni with known email addresses. A fairly small percentage of these are returned, and those that are returned generally mirror the results of the exit surveys. Comments are very positive for the most part. For copies of exit surveys received in the last three years, see Appendix F.

Even though it is more informal, we do listen to current student comments. We do a lot of individualized advising in Math and Sciences because so many of our students are applying to specific programs out-of-state and therefore have slightly different prerequisites. Often students come to us with problems caused by poor advising from another unit where a student was wrongly assigned, or started as a general studies student. While most of these problems were created based on information that the students provided on an application, we could still do a better job by catching those mistakes early.

Each year UAMS College of Medicine hosts pre-med advisors meetings, and on an occasional basis the College of Pharmacy hosts the pre-pharmacy advisors. This year, Dean Bramlett attended each of those meetings. Although very little specific information is provided about performance of our students during the meeting, there is information provided in private conversations. The information is not student specific in order to not violate FERPA laws, but is more general in nature. This year, all comments about UAM students currently in their program were very positive, with one student doing exceptionally well (based on student info, all A's). The College of Pharmacy also spoke highly of our students but did indicate that at least one of our students had struggled and would likely have to repeat the first year. They attributed this to personal issues, and not lack of academic preparation.

At professional meetings, our faculty members often meet faculty from graduate programs that have accepted our students. Again, we cannot get specific information about a student, but we do get generalized information about what we can do to improve our programs. In the sciences, they want to see more research and writing. In the Master of Arts in Teaching (MAT) program, they want the

students more exposed to educational settings, and possibly introduce some pedagogy into their curriculum.

6. As a result of the review of your student learning data in previous questions, explain what efforts your unit will make to improve student learning over the next assessment period. Be specific indicating when, how often, and by whom these improvements will take place.

Based on comments from the College of Pharmacy, we are going to put more emphasis on structure, polarity, and physical properties of organic compounds in both General Chem and Organic Chemistry. We do cover that material, but in reality we probably don't spend as much time on that as we should because we are in a hurry to get to other material. We can certainly rearrange our material in order to give that topic more emphasis. These changes will be made by the faculty members in chemistry that are teaching Chem II and Organic Chemistry I. The increased emphasis on this material will change less than 1 week worth of material in each course. The changes will remain in place each year as these courses are taught.

Based on one student's comments, we are going to implement more 1st day of class advising. A student was very upset that she was advised to get most of her general education courses out of the way first, and was put into Intro to Biological Sciences to fulfill her general education requirement while she should have been in Principles of Biology to fulfill a major requirement. The student was immediately a year behind and had to take some pretty heavy course loads in order to get back on track. Ultimately, it prevented her from applying to pharmacy school at the end of her sophomore year. This is unfortunate, and we must try to prevent this situation from happening in the future. Too many courses are taught on a once per year basis and that magnifies the problem. We are going to do a better job of letting students know what their options are concerning other classes, and just try to do an overall better job of letting the students know what the expectations are for the course. The Dean is making these recommendations to the faculty to spend more time on the first day of class in each course to talk about topics related to academic advising. The faculty in each course will be responsible for how they change their first day of class information to include these topics.

Very few changes will be made based on conversations with graduate programs in the sciences. From the contact we have had with graduate programs in the sciences, our students are well-prepared. Most of our science students are participating in some sort of undergraduate research projects, and in most, they must provide written output. We are considering the possibility of having students write a research proposal as part of their undergraduate curriculum; however, we have not decided in which class that should be done. At this time, the low number of traditional chemistry majors has made this a lower priority. When/if changes are made, all science faculty will have input on how these changes can be made. We are currently working with the School of Education in the development of a minor related to teacher education that will give the students planning to enter the MAT program more exposure to public school classrooms, and ultimately a better background in teaching strategies, evaluating students, using technology in the classroom, and classroom management. These changes are being implemented by the School of Education with strong support from the School of Mathematical and Natural Sciences. The plan is currently being developed and will go to Curriculum and Standards in the Fall 2011 term. The minor should be implemented by July 2012. Recruitment of students into this minor will be done by both the School of Education and the School of Mathematical and Natural Sciences. Other units on campus are likely going to want to be involved in this minor as it is developed.

7. What new tactics to improve student learning has your unit considered, experimented with,

researched, reviewed or put into practice over the past year.

The major implementation in the past twelve months has been the development of the in-house Introduction to Algebra text, and more importantly the combining of that text with the ALEKS learning software package. Several remedial mathematics software packages have been reviewed; however, the faculty involved strongly favored ALEKS over the others due to cost and the student friendliness of the program.

Work has begun on developing a similar program for College Algebra. Dr. Hassan Sayyar is developing the text at this time. Review of software will begin this year. Plans are to have this in place by Fall 2012.

The mathematics tutoring has been moved primarily to the Science Center. We now hire math majors as tutors, and keep the tutor room open essentially all day long for those that need additional assistance. The tutoring is done in the computer lab, so that students needing help with ALEKS will have easy access.

In chemistry, some preliminary work has been done on developing electronic lectures that the students can watch on their own time, which would allow class time to be used more for problem solving and critical thinking activities. At this time, the technology that will be used is probably going to be voice-over Powerpoint. The software is readily available as part of the Microsoft package. A microphone can be plugged into any computer to add the voice-over. The one issue that has slowed this project is the implementation of hand drawn material, which is greatly necessary in teaching chemistry. The writing/drawing of structures on paper and scanning is tedious. Interwrite boards were considered but formatting incompatibilities with Powerpoint software made them difficult to use. Other systems of importing hand drawn structures are being considered at this time.

In biology, we have discussed the addition of audiovisual equipment to the laboratories. This will be especially helpful during the dissection portions of those labs. The students can more effectively see what their own dissection should look like. If a suitable connection can be made to a microscope, even slides could be viewed using this system.

We have discussed the possibility of more on-line courses in Math and Sciences, and have briefly looked at some that are available through other universities. We have talked with faculty from other universities that teach on-line courses, and in almost every case, they tell us that the online science courses, especially the laboratories, are a joke. It is the strong opinion of the Math and Science faculty, including the dean, that the availability of on-line classes does nothing to improve learning.

8. How do you ensure shared responsibility for student learning and assessment among students, faculty, and other stakeholders?

Students are continually given feedback on their progress throughout each course by posting of grades on exams, quizzes, homework, lab assignments and other assignments. Students meet with advisors at least once per term, and more realistically, several times per term. The students provide feedback to the unit in the form of student evaluations. In addition to the summary of student responses on the student evaluation form, all student comments from the student evaluations are typed, reviewed by the School Dean, and discussed with the faculty. Many students meet with Dean Bramlett to discuss classes, progress toward a degree, committee references for those applying to professional school, and often just to informally chat. Exit interviews give graduating seniors a chance to discuss issues with the Dean on a more formal level. See Appendix E.

Faculty are encouraged to maintain good communication with their students and properly post up to date

grades. At the encouragement of the dean, several faculty now pass out mid-term grade sheets to students in the lower level classes. The faculty are also involved with collection of data and reporting to the appropriate assistant dean, dean, or the Math and Science representative to CASAA.

The information is organized, and the Annual Assessment Report is written by the dean.

9. Describe and provide evidence of efforts your unit is making to recruit/retain/graduate students in your unit at the University.

We have certainly become more active in recruiting students over the past two years. Over the past two year period, more than 30 classroom visits in the local schools have been done by Math and Science faculty. Many of these visits have been guest teaching appearances in Advanced Placement Chemistry courses. In 2009-10, visits were made to Hamburg (19), Sheridan(4), and Crossett schools(2). In 2010-11, visits were made to Hamburg (2), Crossett (4), Rison (4), and Monticello (2). In each visit, a lecture over a subject that the high school teacher felt he/she was weak in was done. Recruiting information was also made available to the students and teachers. Other visits not involving AP class recruitment have been made to Star City (3), Drew Central(1), Monticello (3), and Sheridan (1). The large number of visits to Hamburg in 2009-10 appear to have paid off with 6 of the 10 AP students from that year's graduating class attending UAM. On the first visit of the year, only one student indicated they were coming to UAM.

In addition to the classroom visits, the School of Mathematical and Natural Sciences and the Education Renewal Zone hosted four different Saturdays of Advanced Placement test prep in which 60-100 students attended each day. We also hosted the Regional Mathematics Contest and the Regional Science Fair. Science Fair information can be found at http://www.uamont.edu/math_and_sciences/RSF/. At all of these events, faculty and representatives from Admissions were given the opportunity to meet with students and discuss the potential to attend college at UAM.

To retain students, the faculty in Math and Sciences are giving freshmen special attention during academic advising and also in the first day of freshmen level classes. They are given very specific information on expectations in each course, and also for each major or pre-professional curriculum, such as curriculum guides. These are available at: http://www.uamont.edu/Math_and_Sciences/academics.htm. Scholarships are also provided by the School of Mathematical and Natural Sciences. For 2010-11, \$10,321 were awarded per semester. For 2011-12, \$9955 per semester will be awarded. These awards greatly reduce the financial burden on those that are attending college, thus improving retention.

The scholarships that will be awarded by Math and Sciences beginning in the Fall 2011 term will be:

ENDOWED SCHOLARSHIPS

Name	BUDGET 2011/2012 Amt Per Semester
Dr. Van C. Binns Scholarship - Pre-Medicine	935
***Anthony T. and Faye Chandler Scholarship	115
James Gordon Culpepper Scholarship	530
Gregory Alan Devine Memorial Scholarship	710
Dr. Albert L. Etheridge Scholarship	545
William and Anna Hill Scholarship	1,685
Wilburn C. Hobgood Scholarship	495
Mr. Jim Huey Scholarship	330
Dr. C. Lewis & Wanda W. Hyatt Endowed Scholarship	335
Victoria Ku Scholarship	475
Mathematics Scholarship	260
Mathematics & Physics Scholarship	370
Miller Sisters' Scholarship - Science	850
Herman C. Steelman Scholarship	385
Jack H. Tharp Scholarship	710
Carolyn Hibbs Thompson Chemistry Scholarship	910
Dr. Paul Allen Wallick, Sr. Scholarship	315
	\$ 9,955

Many of the above scholarships will be split among several students

Mathematical & Natural Sciences Non-Endowed Sch	Balance 3/14/2011
Math & Natural Sciences Scholarship	\$1,419

The funds in the non-endowed scholarship are often used to aid in degree completion of seniors who have exhausted their state or athletic scholarships.

The School of Mathematical and Natural Sciences also uses both institutional and federal work study funds to employ as many of our students as possible. They are employed as general office help, math tutors, lab teaching assistants, graders, museum and herbarium help, and research assistants. It is a strong belief that the more the student works on campus, the stronger the connection the student will have with the University, and the more likely the student will be to graduate.

We also use the Biology Club, the Medical Science Club, and the Math and Physics Club as social hooks for students. Getting involved in these clubs gives them more of a purpose to be here other than just attending classes. It also gives them a glimpse of the future that a degree in the Math and Sciences areas can provide. These clubs bring in speakers from other universities and from industry. They do community service projects, such as highway clean-up, Saline River stream team clean-up events, and Relay for Life. They have social events such as football tailgating and cookouts.

The overall goal of the School of Mathematical and Natural Sciences is to produce successful students, which in most cases implies graduating with a degree; however, it is ironic that the most successful students often gain admission to a professional school prior to completing their degree. We do allow courses to transfer back for degree completion purposes within the guidelines set by the University (see page 64, 2011-13 UAM Catalog); however, especially in allied health programs, those students do not have enough hours to qualify. Those students are encouraged to complete the associates degree, but many do not choose to take the specific remaining courses to do so.

In most of the Math and Science majors, there are a fairly large number of students who change their major, often to majors in other units, after their first semester or first year. The rigors of chemistry, biology, math and physics often are greater than the student expected. Many people enter UAM with an interest in pharmacy or medicine, but after one or two courses decide that their skill level isn't adequate for those pursuits. Those students are often encouraged to change their major to something else. The perfect example is a recent student, who was encouraged to look into other majors. He indicated that he always wanted to be a journalist, but his grandfather was a pharmacist, so he chose that field to please him. It was obvious that he didn't have his heart in the science courses, and his performance would not have allowed him to be admitted to pharmacy school. After encouraging him to go for the field he loved, he did, and now he is a successful journalist. When these students change majors, this is not necessarily a retention problem since they are likely to graduate in another major; however, since we have no mechanism to track these students, our numbers of graduates relative to the numbers of majors does not look good. For numbers of majors and numbers of graduates over the past several years, see Appendix G. After the freshmen year fall-off, a fairly large percentage of the students do graduate and are successful in industry, a graduate program, or in the field of education. For a list of initial placement of our graduates over the past several years, see Appendix D.

Letters and emails have been sent to several students that have completed a significant portion of their degree and then dropped out. Options are reviewed to see if prior biology and chemistry majors are closer to a Natural Science or the Bachelor of General Studies degree. Currently there are three former drop outs making plans to complete their degree. Others are strongly considering the possibility. See Appendix H for a copy of a letter sent to a student.

The following is the story of one recent degree completion student from the School of Mathematical and Natural Sciences.

Dean Bramlett ran across a former student on Facebook. He remembered that she was very near completion of her degree in Biology, but did not finish. After reviewing her transcript, he discovered that she was only one course short of graduation, and that course was a humanities elective. Her telephone number was on her Facebook page, so Dean Bramlett gave her a call, only to discover her crying as she answered the phone. It turned out that four months prior, her husband had been killed in an on the job accident. She was at home with two young children and was really having a hard time coping with the situation even though she was taken care of financially by her husband's workplace. He indicated why he was calling, and said that he would call back another time since she didn't seem to be in the mood to talk. She responded, "No, wait, I need direction in my life, and this might be what gets me started." She looked at the course needed for degree completion, and discovered that there was a CLEP exam that would fulfill that requirement. She ordered the study materials on-line and studied for approximately one month. She passed the CLEP exam and a degree was awarded. Since that time, she was accepted into the UALR School of Law and is now beginning her second year of law school. Although all degree completion scenarios don't end this way, it certainly makes a difference, not only in the student's life, but also in the life of the faculty and staff that helped that student finish.

**Appendices for the
Annual Assessment Report
2009-2010**

School of Mathematical and Natural Sciences

- Appendix A Intro, Intermediate, and College Algebra
Grade Distributions with ASSET Data
- Appendix B Nationally Scored Exam Results
PCAT, MCAT, and DAT Scores
- Appendix C General Chem I and II Syllabi
- Appendix D Initial Placement Information
- Appendix E Exit Survey Questions
- Appendix F Returned Alumni Surveys
- Appendix G Reconnect Letter to Student

Appendix A

**Introduction to Algebra,
Intermediate Algebra with ASSET scores
College Algebra
Grade Distributions**

Introduction to Algebra Grade Distributions
Summer II 2010 - Summer I 2011

Term	Dept	Crs #	Sec	Course Short Name	Total Enr	A	B	C	D	F	W	I or Au	Instr	C or better Percent Pass
Fall	Math	143	1	Intro Alg	36	2	1	1	2	25	5	0	Efird	11.1
Fall	Math	143	2	Intro Alg	34	1	0	0	2	24	7	0	Nelson	2.9
Fall	Math	143	3	Intro Alg	40	3	4	3	2	18	10	0	Ryburn	25.0
Fall	Math	143	4	Intro Alg	37	5	1	0	5	15	11	0	Ryburn	16.2
Fall	Math	143	5	Intro Alg	32	1	3	5	1	13	9	0	Ryburn	28.1
Fall	Math	143	6	Intro Alg	33	2	1	5	2	16	7	0	Ryburn	24.2
Fall	Math	143	7	Intro Alg	37	1	2	3	2	21	8	0	Nelson	16.2
Fall	Math	143	8	Intro Alg	35	1	3	7	1	17	6	0	Fox	31.4
Fall	Math	143	9	Intro Alg	27	2	2	5	1	11	6	0	Fox	33.3
Fall	Math	143	71	Intro Alg	33	4	3	7	1	2	16	0	Ricks	42.4
Fall	Math	143	72	Intro Alg	23	0	4	2	1	2	14	0	Gavin	26.1
Fall	Math	143	73	Intro Alg	25	0	3	3	0	7	12	0	Gavin	24.0
Fall	Math	143	75	Intro Alg	18	0	3	3	0	4	8	0	Gavin	33.3
Spr	Math	143	1	Intro Alg	36	3	0	1	2	16	14	0	Chapman	11.1
Spr	Math	143	2	Intro Alg	38	1	1	2	4	18	12	0	Chapman	10.5
Spr	Math	143	3	Intro Alg	35	1	3	2	3	18	8	0	Chapman	17.1
Spr	Math	143	4	Intro Alg	33	1	1	1	1	19	10	0	Chapman	9.1
Spr	Math	143	5	Intro Alg	36	0	1	0	3	22	10	0	Gavin	2.8
Spr	Math	143	71	Intro Alg	31	4	1	5	1	7	13	0	Donald	32.3
Spr	Math	143	72	Intro Alg	15	1	0	1	2	3	8	0	Gavin	13.3
Spr	Math	143	73	Intro Alg	18	1	2	0	1	5	9	0	Gavin	16.7
Spr	Math	143	83	Intro Alg	18	2	2	1	0	7	6	0	Ryburn	27.8
Sum II	Math	143	1	Intro Alg	2	0	1	1	0	0	0	0	Fox	100.0
Sum II	Math	143	71	Intro Alg	25	8	5	4	0	2	6	0	Ricks	68.0
Sum II	Math	143	90	Intro Alg	13	0	0	0	4	4	5	0	Sayyar	0.0
Sum II	Math	143	92	Intro Alg	5	0	0	0	1	0	4	0	Sayyar	0.0
Su I	Math	143	1	Intro Alg	13	1	0	2	3	3	4	0	Ryburn	23.1
Su I	Math	143	2	Intro Alg	7	1	0	0	2	2	2	0	Chapman	14.3
Su I	Math	143	71	Intro Alg	10	1	0	1	2	2	4	0	Donald	20.0
% pass C or better														
Totals per term					Tot	A	B	C	D	F	W	I/Au		
Sum II					45	8	6	5	5	6	15	0	42.2	
					%	17.8	13.3	11.1	11.1	13.3	33.3	0.0		
Fall tot					410	22	30	44	20	175	119	0	23.4	
					%	5.4	7.3	10.7	4.9	42.7	29.0	0.0		
Spr tot					260	14	11	13	17	115	90	0	14.6	
					%	5.4	4.2	5.0	6.5	44.2	34.6	0.0		
Su I tot					30	3	0	3	7	7	10	0	20.0	
					%	10.0	0.0	10.0	23.3	23.3	33.3	0.0		
Year					745	47	47	65	49	303	234	0	21.3	
					%	6.31	6.31	8.72	6.58	40.7	31.4	0		

Intermediate Algebra Grade Distributions
Summer II 2010 - Summer I 2011

Term	Dept	Crs #	Sec	Course Short Name	Total Enr	A	B	C	D	F	W	I or Au	Instr	C or better % Pass	# pass ASSET	# take ASSET
Fall	Math	183	2	Inter Alg	34	1	0	12	0	11	10	0	Lynde	38.2	13	16
Fall	Math	183	3	Inter Alg	39	2	1	18	0	9	9	0	Chapman	53.8	21	24
Fall	Math	183	4	Inter Alg	40	1	0	15	0	14	10	0	Efird	40.0	16	22
Fall	Math	183	5	Inter Alg	35	0	3	8	0	9	15	0	Chapman	31.4	11	15
Fall	Math	183	6	Inter Alg	33	0	1	13	0	7	12	0	Efird	42.4	14	16
Fall	Math	183	7	Inter Alg	36	2	0	8	0	7	19	0	Chapman	27.8	10	11
Fall	Math	183	8	Inter Alg	21	0	0	8	0	3	10	0	Dolberry	38.1	8	8
Fall	Math	183	9	Inter Alg	13	0	0	7	0	2	4	0	Lynde	53.8	7	7
Fall	Math	183	10	Inter Alg	22	0	3	2	1	4	12	0	Fox	22.7	5	8
Fall	Math	183	71	Inter Alg	32	3	8	9	4	0	8	0	Ricks	62.5		
Fall	Math	183	72	Inter Alg	15	1	0	3	1	1	9	0	Gavin	26.7	3	5
Fall	Math	183	74	Inter Alg	18	4	0	3	0	1	10	0	Gavin	38.9	7	7
Spr	Math	183	1	Inter Alg	20	0	0	4	5	3	8	0	Nelson	20.0	7	10
Spr	Math	183	2	Inter Alg	35	2	3	5	1	18	5	1	Fox	28.6	13	21
Spr	Math	183	3	Inter Alg	26	1	0	0	6	8	11	0	Nelson	3.8	6	11
Spr	Math	183	4	Inter Alg	32	2	1	2	5	13	9	0	Fox	15.6	11	18
Spr	Math	183	5	Inter Alg	8	0	0	1	2	4	1	0	Nelson	12.5	1	3
Spr	Math	183	6	Inter Alg	32	0	1	5	4	15	7	0	Ryburn	18.8	11	16
Spr	Math	183	7	Inter Alg	8	0	2	2	1	0	3	0	Lynde	50.0	5	5
Spr	Math	183	8	Inter Alg	15	0	3	2	1	8	1	0	Lynde	33.3	6	7
Spr	Math	183	60	Inter Alg	5	3	0	1	1	0	0	0	Fox	80.0	5	5
Spr	Math	183	71	Inter Alg	30	2	2	4	3	5	13	1	Reed	26.7		
Spr	Math	183	72	Inter Alg	11	0	0	3	0	2	6	0	Gavin	27.3	3	4
Spr	Math	183	73	Inter Alg	7	0	0	2	0	3	2	0	Gavin	28.6	1	2
Spr	Math	183	74	Inter Alg	15	1	4	2	0	4	4	0	Gavin	46.7	5	7
Sum II	Math	183	2	Inter Alg	11	0	2	3	3	2	1	0	Fox	45.5		
Sum II	Math	183	71	Inter Alg	22	4	7	6	3	0	2	0	Ricks	77.3		
Sum II	Math	183	90	Inter Alg	14	1	2	2	1	0	8	0	Sayyar	35.7		
Sum II	Math	183	92	Inter Alg	5	0	1	3	0	0	1	0	Sayyar	80.0		
Sum II	Math	183	93	Inter Alg	4	0	3	0	0	0	1	0	Sayyar	75.0		
Su I	Math	183	1	Inter Alg	10	0	0	2	3	0	5	0	Dolberry	20.0	5	5
Su I	Math	183	2	Inter Alg	5	0	0	1	2	0	2	0	Chapman	20.0	1	3
Summer II 2010 ASSET scores not collected. ASSET implemented Fall 2010														pass	taken	
Annual ASSET Totals														189	248	

Totals per term	Tot	A	B	C	D	F	W	I/Au	% Pass	C or better
Sum II	56	5	15	14	7	2	13	0		60.7
	%	8.9	26.8	25.0	12.5	3.6	23.2	0.0		
Fall tot	338	14	16	106	6	68	128	0	*	40.2
	%	4.1	4.7	31.4	1.8	20.1	37.9	0.0		
Spr tot	244	11	16	33	29	83	70	2		24.6
	%	4.5	6.6	13.5	11.9	34.0	28.7	0.8		
Su I tot	15	0	0	3	5	0	7	0		20.0
	%	0.0	0.0	20.0	33.3	0.0	46.7	0.0		
Year	653	30	47	156	47	153	218	2		35.7
	%	4.6	7.2	23.9	7.2	23.4	33.4	0.3		

*The fall percentage passing was greatly inflated by allowing all students that passed the ASSET exam to receive a minimum grade of C for the course. In the other terms, the passing percentage with a C or better counts only coursework; however, the ASSET exam is counted as the final exam in both fall and spring terms. The actual percentage of those passing the course with a C or better is 24.5%

College Algebra Grade Distributions
Summer II 2010 - Summer I 2011

Term	Dept	Crs #	Sec	Course Short Name	Total Enr	A	B	C	D	F	W	I or Au	Instr	D or better Percent Pass
Fall	Math	1043	1	Coll Alg	39	2	9	9	5	5	9	0	Nelson	64.1
Fall	Math	1043	2	Coll Alg	39	0	3	6	11	7	12	0	Sayyar	51.3
Fall	Math	1043	3	Coll Alg	39	1	3	4	4	12	15	0	Dolberry	30.8
Fall	Math	1043	4	Coll Alg	39	4	7	9	5	4	10	0	Chapman	64.1
Fall	Math	1043	5	Coll Alg	40	0	4	5	6	10	15	0	Nelson	37.5
Fall	Math	1043	6	Coll Alg	18	1	2	4	1	4	6	0	Sayyar	44.4
Fall	Math	1043	7	Coll Alg	30	1	6	5	2	8	8	0	Sayyar	46.7
Fall	Math	1043	8	Coll Alg	27	1	3	5	5	6	7	0	Dolberry	51.9
Fall	Math	1043	9	Coll Alg	43	2	12	8	4	11	6	0	Fox	60.5
Fall	Math	1043	E30	Coll Alg	66	23	28	12	1	0	2	0	Slayton	97.0
Fall	Math	1043	60	Coll Alg	13	0	2	3	2	0	6	0	Fox	53.8
Fall	Math	1043	71	Coll Alg	27	3	8	4	0	2	10	0	Martin	55.6
Fall	Math	1043	E40	Coll Alg	31	13	13	5	0	0	0	0	Martin	100.0
Spr	Math	1043	1	Coll Alg	14	0	0	3	1	3	7	0	Dolberry	28.6
Spr	Math	1043	2	Coll Alg	25	0	0	5	8	7	5	0	Dolberry	52.0
Spr	Math	1043	3	Coll Alg	34	4	10	6	3	3	8	0	Fox	67.6
Spr	Math	1043	4	Coll Alg	15	0	1	1	4	9	0	0	Sayyar	40.0
Spr	Math	1043	5	Coll Alg	29	1	3	4	9	7	5	0	Efird	58.6
Spr	Math	1043	6	Coll Alg	3	1	0	2	0	0	0	0	Sayyar	100.0
Spr	Math	1043	7	Coll Alg	23	2	6	4	1	5	5	0	Fox	56.5
Spr	Math	1043	8	Coll Alg	26	2	0	2	7	9	6	0	Efird	42.3
Spr	Math	1043	E1	Coll Alg	87	41	37	7	0	0	2	0	Belvin	97.7
Spr	Math	1043	E2	Coll Alg	94	33	29	16	7	0	9	0	Slayton	90.4
Spr	Math	1043	E32	Coll Alg	23	2	15	4	1	0	1	0	Gorman	95.7
Spr	Math	1043	71	Coll Alg	17	2	3	6	2	1	3	0	Martin	76.5
Spr	Math	1043	60	Coll Alg	8	0	1	2	0	2	3	0	Ryburn	37.5
Spr	Math	1043	83	Coll Alg	6	0	1	0	1	3	1	0	Ryburn	33.3
Sum II	Math	1043	1	Coll Alg	28	2	3	9	4	1	9	0	Nelson	64.3
Su I	Math	1043	1	Coll Alg	10	1	5	2	2	0	0	0	Abedi	100.0
Su I	Math	1043	2	Coll Alg	10	1	5	1	2	0	1	0	Abedi	90.0
Totals per term					Tot	A	B	C	D	F	W	I/Au	% Pass C or better	
Sum II					28	2	3	9	4	1	9	0	50.0	
					%	7.1	10.7	32.1	14.3	3.6	32.1	0.0		
Fall tot					451	51	100	79	46	69	106	0	51.0	
					%	11.3	22.2	17.5	10.2	15.3	23.5	0.0		
Spr tot					404	88	106	62	44	49	55	0	63.4	
					%	21.8	26.2	15.3	10.9	12.1	13.6	0.0		
Su I tot					20	2	10	3	4	0	1	0	75.0	
					%	10.0	50.0	15.0	20.0	0.0	5.0	0.0		
Year					903	143	219	153	98	119	171	0	57.0	
					%	15.8	24.3	16.9	10.9	13.2	18.9	0.0		

Appendix B

Nationally Scored Exam Results

PCAT Scores

MCAT Scores

DAT Scores

PCAT Exam Scores

Student A Test Date August 2010 The Psychological Corporation

Multiple Choice Scores	Scaled Score	Percentile Rank
Verbal Ability	385	24
Biology	379	14
Reading Comprehension	390	29
Quantitative Ability	390	24
Chemistry	405	53
Composite	390	24
Writing Scores	Your Score	Avg Score
Conventional Language	3.0	2.74
Problem Solving	3.0	2.74

Student A (same student as above) Test Date October 2010 The Psychological Corporation

Multiple Choice Scores	Scaled Score	Percentile Rank
Verbal Ability	374	12
Biology	387	25
Reading Comprehension	408	58
Quantitative Ability	386	19
Chemistry	402	48
Composite	391	26
Writing Scores	Your Score	Avg Score
Conventional Language	3.0	2.74
Problem Solving	3.0	2.74

Student B

Test Date August 2010

The Psychological Corporation

Multiple Choice Scores	Scaled Score	Percentile Rank
------------------------	--------------	-----------------

Verbal Ability	391	36
Biology	401	51
Reading Comprehension	381	22
Quantitative Ability	396	38
Chemistry	400	48
Composite	396	39

Writing Scores	Your Score	Avg Score
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Conventional Language	3.0	2.74
Problem Solving	3.0	2.74

Student C

Test Date October 2010

The Psychological Corporation

Multiple Choice Scores	Scaled Score	Percentile Rank
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Verbal Ability	432	89
Biology	417	76
Reading Comprehension	413	66
Quantitative Ability	420	74
Chemistry	405	53
Composite	417	76

Writing Scores	Your Score	Avg Score
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Conventional Language	2.0	2.74
Problem Solving	2.0	2.74

Student D Test Date October 2010 The Psychological Corporation

Multiple Choice Scores Scaled Score Percentile Rank

Verbal Ability	380	20
Biology	399	45
Reading Comprehension	426	82
Quantitative Ability	386	19
Chemistry	411	68
Composite	400	45

Writing Scores Your Score Avg Score

Conventional Language	3.0	2.74
Problem Solving	3.0	2.74

Student E Test Date January 2011 The Psychological Corporation

Multiple Choice Scores Scaled Score Percentile Rank

Verbal Ability	396	42
Biology	408	60
Reading Comprehension	387	31
Quantitative Ability	394	34
Chemistry	400	48
Composite	400	46

Writing Scores Your Score Avg Score

Conventional Language	3.0	2.74
Problem Solving	3.0	2.74

Student F Test Date October 2010 The Psychological Corporation

Multiple Choice Scores Scaled Score Percentile Rank

Verbal Ability		
Biology		
Reading Comprehension		
Quantitative Ability		
Chemistry		
Composite	416	77

No individual scores were provided, only the overall composite score.

Student F	Test Date October 2010	The Psychological Corporation
Multiple Choice Scores	Scaled Score	Percentile Rank
Verbal Ability		
Biology		
Reading Comprehension		
Quantitative Ability		
Chemistry		
Composite	406	57

No individual scores were provided, only the overall composite score.

MCAT Test Scores

Three students have taken the exam in July 2010.

Student A (This student spent only 3 semesters at UAM. Transfer from Arkansas Tech)

Test Date	07/2010 (Series)	Score	Percentile
	Verbal Reasoning	7	28.6-37.8
	Physical Sciences	8	38.6-55.5
	Writing Sample	M	12.1-35.1
	Biological Sciences	9	40.9-57.6
	Total Score	24-M	37.8-43.4

Note: Computer Based Test

Student B

Test Date	07/2010 (Series)	Score	Percentile
	Verbal Reasoning	8	37.9-52.7
	Physical Sciences	7	25.8-38.5
	Writing Sample	M	12.1-35.1
	Biological Sciences	8	28.1-40.8
	Total Score	23-M	32.4-37.7

Note: Computer Based Test

Student C

Test Date	07/2010 (Series)	Score	Percentile
	Verbal Reasoning	10	65.4-76.6
	Physical Sciences	10	69.7-80.1
	Writing Sample	M	12.1-35.1
	Biological Sciences	12	79.4-88.4
	Total Score	32-M	75.3-80.3

Note: Computer Based Test

Student D

Test Date	07/2010 (Series)	Score	Percentile
	Verbal Reasoning	8	37.9-52.7
	Physical Sciences	7	25.8-38.5
	Writing Sample	M	12.1-35.1
	Biological Sciences	7	16.4-28.0
	Total Score	22-M	28.1-32.3

Note: Computer Based Test

DAT Test Scores

Student E

August 2010 Test Date

	Score	Percentile
Perceptual Ability	17	52
Quant. Reasoning	16	64
Reading Comp.	19	52
Biology	17	49
Gen Chemistry	17	47
Org Chemistry	21	86
Total Science	18	63
Academic Avg	18	63

Note: Standard Scores used in the testing program range from 1 to 30. Only standard scores are reported to dental schools.

Academic Average is the average of the five scores rounded to the nearest whole number, QR, RC, B, GC, OC

Total Science score is a standard score based on all 100 questions in Biology, General Chemistry, and Organic Chemistry
It is not the average of the three science standard cores.

Appendix C

General Chem I and II Syllabi

CHEM 1103**GENERAL CHEMISTRY I**

Note: This course is the first part of a two semester course surveying the basic principles and concepts in chemistry

Text: *General Chemistry: The Essential Concepts*, 6th Ed. by Chang

Prerequisites/Co-requisites: ENG 1013 (Comp I), MATH 0065 (Int. Alg), or equivalent are co-requisites for this course. See the current academic catalog for more information.

INSTRUCTOR:

Office Hours: M-F 9:00 – 10:00, or by appointment

COURSE:

Format: Three hours of lecture per week.

- Goals:
- to provide the student with a general overview of the fundamental concepts of science.
 - to provide each student with details of laws and theories applicable to chemistry.
 - to provide practical laboratory experiences to reinforce the natural laws and theories of chemistry.
 - to provide each student with general properties of elements and compounds including uses, hazards, and proper handling techniques.
 - to enhance the scientific approach to reasoning and problem solving.

Course Content: Topics to be covered in lecture are:

- | | |
|----------------------------------|--|
| 1. Introduction | 6. Energy Relationships in Chemical Reactions |
| 2. Atoms, Molecules, and Ions | 7. The Electronic Structure of Atoms |
| 3. Stoichiometry | 8. Periodic Relationships among the Elements |
| 4. Reactions in Aqueous Solution | 9. Chemical Bonding I: The Covalent Bond |
| 5. Gases | 10. Chemical Bonding II: Molecular Geometry and Hybridization of Atomic Orbitals |

GRADING:

Four 1 hour exams and a comprehensive final exam will be given. All four exams and final will count 100 points each. The lowest of the four 1 hour exams will be dropped and replaced with the percentage scored on the final exam, if the score on the final exam is higher. Quizzes will be given regularly, sometimes unannounced. The combined quizzes will be worth 100 pts, (equivalent to 1 exam). The best 7 quiz scores will be used to calculate the quiz average. Homework assignments will be taken up and graded regularly, and will be worth a total of 50 pts for the semester. Late homework will not be accepted. No make-ups will be given for quizzes or exams. Any missed quiz or test will count as your drop score. Only one exam score may be dropped and replaced with the final exam. The final exam cannot be dropped.

Grade Scale

88 - 100%	= A
77 - 87%	= B
66 - 76%	= C
55 - 65%	= D
< 55%	= F

ATTENDANCE: Regular attendance is required. Roll will be taken daily, and irregular attendance may be reported to the university administration for possible action involving financial aid. Absences result in loss of homework and possibly quiz points for that day. You are responsible for learning all material covered in class on days you are absent.

READING AND REFERENCE MATERIAL: Additional copied material will be distributed in class. Materials for further reading are available in the library or from my office. Student Solutions Manual, and Student Study Guide are available in the bookstore, however purchase of these supplements are optional.

ACADEMIC HONESTY: Cheating, helping others cheat, disruptive behavior, or other improper conduct will not be tolerated, and could lead to dismissal from the course with a failing grade.

The use of graphing and programmable calculators are permitted, however, if your calculator contains information that you do not want erased, (even from another class) you should bring a different calculator on test days.

SOME IMPORTANT DATES TO REMEMBER:

January (Wednesday):	First day of classes.
January (Monday):	Martin Luther King Holiday. Offices and classes closed.
January (Wednesday):	Last day to register or add spring classes.
February (Friday):	Deadline to apply for August and December graduation.
March (Monday-Friday):	Spring break.
April (Monday):	Preregistration for summer and fall begins.
April (Wednesday):	Last day to drop with W.
April (Friday):	Preregistration for summer and fall ends.
April (Thursday):	Last day to withdraw from class.
May (Tuesday):	Last day of classes.
May (Wednesday-Tuesday):	Final exams.
May (Friday):	Commencement

FINAL EXAM

Tuesday, May 12 10:30-12:30 All sections Chem 1023, 1103, & 1113..

STUDENTS WITH DISABILITIES

It is the policy of the University of AR at Monticello to accommodate individuals with disabilities pursuant to federal law and the University's commitment to equal educational opportunities. It is the responsibility of the student to inform the instructor of any necessary accommodations at the beginning of the course. Any student requiring accommodations should contact the Office of Special Student Services located in Harris Hall Room 120; phone 870 460-1026; TDD 870 460-1626; Fax 870 460-1926. McGehee: Office of Special Student Services representative on campus; phone 870 222-5360; fax 870 222-1105. Crossett: Office of Special Student Services representative on campus; phone 870 364-6414; fax 870 364-5707.

FREQUENTLY ASKED QUESTIONS

Do I need to buy the book for this class? YES

Do I need to buy the supplemental materials and guides provided by the publisher? NOT REQUIRED

Do you curve grades? NO, BUT ANY GRADE SUCH AS 79.5 WILL ROUND UP TO AN 80

Do you take roll? YES, IT IS REQUIRED BY THE UNIVERSITY

If I miss an exam can I make it up? NO, IT WILL COUNT AS YOUR DROP EXAM

If I have two exams on the same day, can I take yours early or late? NO

Can I drop the final exam? NO

Does the lab affect my grade in this course? NO, IT IS A SEPARATE COURSE WITH A SEPARATE GRADE

Recommended Homework Problems:

Chap 1: 1-40 all, 41, 42, 44, 45, 47-50 all, 55, 56, 57, 59-63 all, 70, 71

Chap 2: 1-57 all, 59-70 all, 72, 73, 74

Chap 3: 1-10 all, 13-33 all, 35-72 all, 74-83 all, 85, 87-92 all, 94, 99, 104, 105, 106

Chap 4: 1-20 all, 23-32 all, 35-66 all, 69, 70, 74-89 all, 91, 92, 93, 94, 98, 100, 103, 105, 107, 108, 110, 111, 112

Chap 5: 1-52 all, 55-90 all, 92-95 all, 102-104 all, 107, 108

Chap 6: 1-79 all, 82-92 all, 94, 95, 98, 101

Chap 7: 1-96 all, 98, 99

Chap 8: 1-76 all, 79-88 all, 90, 92-96 all, 99

Chap 9: 1-77 all, 81-92 all, 94-100 all, 102, 103, 104, 106-110 all

Chap 10: 1-53 all, 55-60 all, 63, 65, 70-72 all

Note: This course is the second part of a two-semester course covering the basic principles and concepts of chemistry

Text: General Chemistry: The Essential Concepts (5th Ed) by Raymond Chang

Prerequisites: Passing grade in Chem 1103 (General Chem I)

INSTRUCTOR:

Office Hours: 8:15-9:00 MWF, 10-11 M-Th or by appointment

COURSE:

Format: Lecture and problem solving sessions

- Goals:
- to provide the student with a general overview of the fundamental concepts of science.
 - provide each student with details of laws and theories applicable to chemistry.
 - to provide practical laboratory experiences to reinforce the natural laws and theories of chemistry.
 - provide each student with general properties of elements and compounds including uses, hazards, and proper handling techniques.
 - to enhance the scientific approach to reasoning and problem solving.

Course Content: Material covered will come from the following topics:

<u>Chap #</u>	<u>Topic</u>	<u>Chap #</u>	<u>Topic</u>
10	Molecular Geometry and Hybridization	17	Acid/Base and Solubility Equilibria
12	Intermolecular Forces & Liquids and Solids	18	Thermodynamics
13	Physical Properties of Solutions	19	Redox and Electrochemistry
14	Chemical Kinetics	21	Nuclear Chemistry *
15	Chemical Equilibrium	11	Organic Chemistry *
16	Acids and Bases		* as time permits

GRADING: Four tests of equal value (100 points ea) will be given this semester. The fifth and final exam is the American Chemical Society Standardized Final Exam and is comprehensive, including Chem I material. If the final exam score is higher than the lowest regular exam score, the regular exam score will be replaced with the percentage scored on the final. This applies to a missed exam; however, only a single exam score will be replaced. Quizzes will be given and combined for a score worth a possible 100 points. The lowest 2 quiz scores will be dropped. Homework will also be collected, and will be worth a possible score of 50 points. Work turned in late is not accepted.

Grading Scale

88 - 100	A
77 - 87	B
66 - 76	C
55 - 65	D
0 - 54	F

POINT VALUES AND GRADING SCALE

Test 1.....100 pts	low score from
Test 2.....100 pts	tests 1-4 will be
Test 3.....100 pts	dropped and
Test 4.....100 pts	replaced by
Quizzes.....100 pts	final exam % if
HW.....50 pts	final is higher
Final Exam,100 pts	
650 pts possible	

ATTENDANCE: Regular attendance is expected. You are responsible for any missed class notes or homework assignments before the next class period.

READING AND REFERENCE MATERIAL: Textbook reading of material covered in class is expected. Additional copied material will be distributed in class. Materials for further reading are available in the library or from my office. Student Solutions Manual, and Student Study Guide are available in the bookstore; however, purchase of the supplements are optional.

ACADEMIC HONESTY: Cheating, helping others cheat, disruptive behavior, or other improper conduct will not be tolerated, and could lead to dismissal from the course with a failing grade. The minimum penalty for cheating will be a zero score on the assignment or exam, which cannot be dropped as the low score for the semester. The second cheating offense results in removal from the course.

IMPORTANT DATES:

January 13 (Wednesday): First day of classes (regular and first 8-week fast-track classes*).

January 13-20 (Wednesday through Wednesday): Late registration. A \$25 late registration fee will be assessed.

January 18 (Monday): Martin Luther King Holiday. Offices and classes closed.

January 20 (Wednesday): Last day to register or add spring classes.

March 3 (Wednesday): Deadline to apply for August and December graduation.

March 22-26 (Monday-Friday): Spring break.

April 5 (Monday): Preregistration for summer and fall begins.

April 7 (Wednesday): Last day to drop with W in regular classes; not applicable to fast-track* classes.

April 16 (Friday): Preregistration for summer and fall ends.

April 29 (Thursday): Last day to withdraw from class (regular and second 8-week fast-track* classes).

May 4 (Tuesday): Last day of classes.

May 5-11 (Wednesday-Tuesday): Final exams.

FINAL EXAM

The General Chemistry II final exam is the American Chemical Society Standardized Final Exam and will include material from General Chem I and General Chem II. A curve is applied to the final exam, typically the final exam percentage equals 2 pts per each correct answer on the exam. The final exam for all sections CHEM 1113 is Wednesday, May 5, 1:00 – 3:00. Please note that this is NOT based on class starting time.

STUDENTS WITH DISABILITIES:

It is the policy of the University of Arkansas-Monticello to accommodate individuals with disabilities pursuant to federal law and the University's commitment to equal educational opportunities. It is the responsibility of the student to inform the instructor of any necessary accommodations at the beginning of the course. Any student requiring accommodations should contact the Office of Special Student Services located in Harris Hall 120, phone 870-460-1026; TDD 870-460-1626; fax 870-460-1926.

OTHER IMPORTANT RULES:

Please turn off and put away all cell phones, pagers, and headphones when in class. DO NOT leave them on your desk.

If you feel that someone may need to contact you in case of emergency, they may call 870-460-1016. You will be retrieved from class immediately

Graphing calculators are permitted; however, they will be cleared before each exam.

Small children may not be brought to class

Talking and other disruptive behavior is not permitted and may be grounds for removal from class.

Please help keep the classroom clean by properly disposing of waste.

Appendix D

5-Year Initial Placement of Graduates

Student #	Grad year	Major 1	Major 2	Minor	Placement
1	2011	Biology	Chem (Biochem)	Spanish	UAMS College of Medicine
2	2011	Biology		Chemistry	Environmental Testing Service
3	2011	Biology		Physics	Univ. of Miss. College of Pharmacy
4	2011	Biology	Chem (Biochem)		Halliburton Research Services
5	2011	Biology		Chemistry	Continuing Education at UAM
6	2011	Biology	Chem (Biochem)		Dayspring Behavioral Health Serv.
7	2011	Biology	Chem (Biochem)		Tulane Univ. M.S. Cell Biology prgm
8	2011	Chem (Biochem)		Math	Univ. of Okla. College of Pharmacy
9	2011	Chem (Biochem)		Biology	Crossett High School-Chem teacher
10	2011	Natural Sci (Life Science Option)		Chemistry	Hospital Laboratory, Hot Springs, AR
11	2011	Natural Sci (Life Science Option)			Plans to enter MAT program and teach science
12	2011	Natural Sci (Life Science Option)			Plans to enter MAT program and teach science
13	2011	Natural Sci (Life Science Option)			Plans to enter Nursing program
14	2010	Biology	Psychology	Natural Science	Ph.D. Program in Psychology in Ohio
15	2010	Biology		History	Technician, Arkansas State Crime Lab
16	2010	Biology	Chemistry		Plans to teach secondary science in Texas
17	2010	Biology		Natural Science	Applying to dental school
18	2010	Biology		Chemistry	Pharmacy School (UAMS)
19	2010	Biology	Chemistry	Spanish	UAMS College of Medicine
20	2010	Biology		Natural Science	Return to Puerto Rico, pre-med internship
21	2010	Biology		Chemistry	D.O. Medicine program at William Carey U.
22	2010	Biology	Chemistry	Spanish	UAMS College of Medicine
23	2010	Biology	Mathematics		M.S. Prgm in Foresic Chemistry; Sam Houston State
24	2010	Mathematics		Sociology	MAT program UAM
25	2010	Mathematics		Spanish	MAT program UAM
26	2010	Mathematics		Coaching	MAT program UAM
27	2010	Natural Science (Life)			unknown
28	2010	Natural Science (Life)			Private Business, Hamburg
29	2010	Natural Science (Life)			Chiropractic School, Dallas TX
30	2009	Agriculture			UAMS College of Pharmacy
31	2009	Biology		Chemistry	UAMS College of Medicine
32	2009	Biology		Natural Science	unknown
33	2009	Biology		Chemistry	ArKat microbiology labs, Dumas, AR
34	2009	Biology		Chemistry	Ph.D. Biochemistry, UAMS
35	2009	Biology		Chemistry	Ph.D. Biology program, University of Arkansas (Aug 09)
36	2009	Biology		Chemistry	Chemist; ArKat, Dumas, AR
37	2009	Biology		Natural Science	Law School UALR
38	2009	Chemistry		Mathematics	Ph.D. Chemistry program, University of Mississippi
39	2009	Chemistry		Mathematics	Ph.D. Chemistry program, University of Arkansas
40	2009	Chemistry		Mathematics	Offered position at chemical company in KS

41	2009	Mathematics		History	Math Teacher-?
42	2009	Mathematics		Psychology	unknown
43	2009	Natural Science (Life)			Entergy, Glendale, AR
44	2009	Natural Science (Life)			Employed at Southeast Arkansas Education Cooperative
45	2009	Natural Science (Life)			Applying to MAT Program at UAM
46	2009	Natural Science (Life)			Arkansas State Parks
47	2009	Natural Science (Life)		History	Mississippi Agri Extension Service
48	2008	Biology		Chemistry	Alternate Southern College of Optometry
49	2008	Biology		Chemistry	Teaching Chemistry at Monticello H.S.
50	2008	Biology		Chemistry	Medical Dosimetry Prgm, UAMS
51	2008	Biology		Natural Science	Pilot training program, HSU
52	2008	Biology		Natural Science	Teaching Biology at McGehee High School and MAT Program
53	2008	Biology		Spanish	Chiropractic School in Dallas
54	2008	Biology		Political Science	Graduate School LSU in Environmental Science
55	2008	Biology		Natural Science	Graduate School Univ. of Arkansas, Molecular Biology/Poultry Sci
56	2008	Biology		Natural Science	Entering Radiology Tech program
57	2008	Biology		Chemistry	Applying to med school after wife completes MAT program
58	2008	Biology		Natural Science	Recently married, no current job plans
59	2008	Biology		Natural Science	Entering Radiology Tech program
60	2008	Biology	Chemistry		Entering graduate school at U-Cal San Diego in Chemistry
61	2008	Biology		Chemistry	UAM College of Medicine
62	2008	Biology		Natural Science	Ph.D. Molecular Biology program, University of Arkansas
63	2008	Biology		Natural Science	Pursuing teacher certification in the Chicago Area
64	2008	Biology		Wildlife Management	Housewife
65	2008	Biology		Natural Science	UAM Nursing program
66	2008	Chemistry		Mathematics	Entering Graduate School Univ. of Minnesota in Chemistry
67	2008	Chemistry	Biology		UAM School of Mathematical and Natural Sciences, Adjunct & Asst
68	2008	Mathematics		History	unknown
69	2008	Mathematics		Natural Science	M.S Mathematics, UALR
70	2008	Mathematics		Coaching	Teaching math at Monticello H.S. and MAT Program
71	2008	Mathematics		CIS	Teaching math at McGehee
72	2008	Mathematics		Physics	Teaching math at Crossett H.S. and MAT Program
73	2008	Natural Science		Agriculture	Pursuing position with Arkansas Game and Fish
74	2008	Natural Science			Housewife
75	2008	Natural Science-Life			Planning to enter Speech Pathology program
76	2007	Biology			Ph.D. program, University of Arkansas-Fayetteville (Biology)
77	2007	Biology			unknown
78	2007	Biology			Chiropractic School, Dallas TX

79	2007	Biology			Working in hospital lab at Dumas, AR
80	2007	Biology			unknown
81	2007	Biology			Dental School UT-Memphis
82	2007	Biology			unknown
83	2007	Biology			Radiological Technology Program, UAMS
84	2007	Biology			Arkansas Pollution Control and Ecology
85	2007	Biology		Natural Science	Graduated UAMS Nuclear Medicine Program in May 08
86	2007	Biology		Natural Science	University of Florida, College of Pharmacy
87	2007	Chemistry	Mathematics		D.O. program, Virginia Tech University
88	2007	Mathematics			Teaching math, Crossett School System
89	2007	Mathematics			MAT program/Teaching math, Dumas School System
90	2007	Mathematics			MAT program/Teaching math, Camden School System
91	2007	Mathematics			Teaching math, Monticello School System
92	2007	Mathematics			MAT program/Teaching math, Star City School System
93	2007	Mathematics		Collateral	Statistician for an insurance company
94	2007	Natural Science			Teaching at Bryant or Benton
95	2007	Natural Science			Completing Doctor of Pharmacy degree, University of LA-Monroe
96	2007	Natural Science			Employed at the Southeast Arkansas Educational Cooperative
97	2007	Natural Science-Life		Chemistry	Entering optometry school in Philadelphia, PA
98	2007	Natural Science-Life			unknown
99	2007	Natural Science-Life		Psychology	Graduate School at Arkansas Tech University in Student Services Ac
100	2007	Natural Science-Life			Teaching science in Tucson, AZ and grad program in Sec Ed
101	2007	Natural Science-Life		Psychology	Gilead Counseling Center in Duams, AR
102	2007	Natural Science-Physical		Agriculture	Part-Time at Bunge in quality control lab, looking for teaching job.
103	2006	Biology			M.S. Toxicology UAMS; Currently UAM-McGehee
104	2006	Biology			Science Teacher, L.R., AR
105	2006	Biology			UAMS, Cytotechnology
106	2006	Biology			UAMS, Respiratory Therapy
107	2006	Biology			M.S. Biology; Emporia State
108	2006	Biology			UAMS, College of Medicine
109	2006	Biology			Science Teacher- Fayetteville
110	2006	Biology			UAMS, College of Medicine
111	2006	Biology			Science Teacher - Crossett H.S.
112	2006	Biology			Preparing to apply for optometry School
113	2006	Biology			Liquor Store owner
114	2006	Biology			Researcher Arkansas Children's Hospital
115	2006	Chemistry			Graduate School, Assistantship, Southern Mississippi University, Ch
116	2006	Chemistry			Graduate School, Fellowship, University of Arkansas, Chemistry
117	2006	Mathematics			Teaching mathematics, Drew Central, MAT program
118	2006	Mathematics			Teaching UAM-Crossett
119	2006	Mathematics			Teaching Mathematics, Warren
120	2006	Mathematics			Assistantship, University of Arkansas; M.S. Mathematics U of A
121	2006	Mathematics			Information held at request of student

122	2006	Natural Science			UAMS, Nuclear Medicine
123	2006	Natural Science			unknown
124	2006	Natural Science			Teaching at Monticello H.S.
125	2006	Natural Science			UAMS, College of Pharmacy

Appendix E

Typical Questions Graduating Senior Exit Interviews

Exit Interview Questions and typical responses

- 1) Ask background information: Name, Hometown, Major, mailing address, email, etc....
- 2) What brought them to UAM?
- 3) How do you rate your time at UAM, 1-5 with 5 being best?
- 4) What were your most favorite parts of your educational experience at UAM?
- 5) What were your least favorite parts of your educational experience at UAM?
- 6) If you could do it over again, would you come to UAM? If no, why not?
- 7) Do you feel that you have received a quality education at UAM? If no, why not?
- 8) Is there anything you would change in your major curriculum?
- 9) Is there anything you would change in your minor (if in Math and Sciences)?
- 10) Was your academic advising adequate?
- 11) What about UAM would you change if you were chancellor for the day?
- 12) What are your plans after graduation?
- 13) What are long term plans?
- 14) Is there anything else you would like to tell us?

Most Common Responses:

- 2) Grew up locally, didn't want to go far away. Have family that work in this area. Came because of athletics.
- 3) Most rank either 4 or 5. Occasionally someone ranks a 3. Only had 1 or 2 students rank it lower in the past 3 years
- 4) Small classes. Get to know professors and other students very well. Cheap. Lots of work study opportunities. Lots of friends here.
- 5) Upper level courses not offered often enough. Not big enough to avoid course conflicts with multiple sections of some courses. Nothing to do here socially. Dorm life.
- 6) Most answer yes. Those that answer no usually indicate it is for non-academic reasons (lack of social life is most common explanation)
- 7) Most answer yes. The occasional negative answer is often related to not being able to find a job in the area after graduation.
- 8) Reduce the number of labs needed for a degree in sciences. Not teach calculus only at 8:10 a.m. five days a week. Not require biology majors to take ESCI class even though they have already taken lab courses in chemistry, physics, and biology. (**This was recently changed**).
- 9) Most say they have no changes. Not require minors to take the lab portion of the courses. Increase the number of upper level options in chemistry and physics.
- 10) Most say yes. There are a few, especially those that start in general studies, that complain about their first semester advising.
- 11) **This question has a wide variety of replies.** Build lots of up to date buildings. Give entire campus wireless access. Build a new entrance to the college that doesn't have to go through Drew Central or Monticello schools. Drop athletic programs. Move the campus into town. Change the mascot. Relax the alcohol rules on campus. Fire _____ (**This blank varies from administrators to faculty/staff; however, there are several names on campus that appear more often than others**).
- 12) Most already have jobs or professional programs in place. A few students planning to teach are too late to enter MAT program, and therefore have to wait a year.
- 13) Most have specific plans involving family and employment near hometown. A few plan to leave for bigger city.
- 14) This is most often unanswered

Appendix F

Alumni Surveys from past three years

Mathematical and Natural Sciences Alumni Survey

Your response is very important to the internal assessment of our programs. Please complete the following. Feel free to give specific examples related to your job, your continued education, or about UAM courses that you have taken. Feel free to attach additional pages if needed. This page is also available on the Math/Science homepage and may be submitted by email as an attachment

Do you feel that UAM prepared you for your professional life? Yes. I was far better prepared than most of my pharmacy school classmates.

What did you like most about the School of Mathematical and Natural Sciences? (Strengths)

Great teachers, flexible schedules for help outside of class, smaller classes so that teachers can help individual students if necessary

What did you like least about the School of Mathematical and Natural Sciences? (Weaknesses) Upper level courses sometimes conflict, but are only offered once every two years.

What changes do you recommend? Make more options in degrees (either course A or B)

Is there anything else you would like to add?

I just really like how the teachers are very willing to help in any way that they can so that the student can learn the information.

The following information is optional:

Name: _____ Name removed _____

Major(s): _____ Pre-Pharmacy _____

Minor(s): _____

E-mail address _____

What are your plans after graduation? Get a job as a pharmacist.

Please drop off your survey to the Math/Science Office in the Science Center or mail to:

Graduate Survey

School of Mathematical and Natural Sciences

P.O. Box 3480

Monticello, AR 71656-3480

Feel free to drop in for a visit. There's usually coffee available. Student organizations have tailgating at football games, etc...

You are always welcome to join in. The newsletter is produced periodically. (Usually early Fall)

If you don't receive an annual newsletter by mail or electronically, please contact the Math/Science office at 870-460-1016.

Mathematical and Natural Sciences Graduate Survey

Your response is very important to the internal assessment of our programs. Please complete the following. Feel free to give specific examples related to your job, your continued education, or about UAM courses that you have taken. Feel free to attach additional pages if needed. This page is also available on the Math/Science homepage and may be submitted by email as an attachment

Do you feel that UAM prepared you for your professional life?

Over all yes, if a person is older and gets into a profession away from his field of study it can be a problem.

What did you like most about the School of Mathematical and Natural Sciences? (Strengths)

The small class sizes and individualized learning that is available is a great advantage.

Another advantage is being able to schedule lab time in the upper level chem. labs (quant.) any time it helps in adding lab skills. Compared to some colleges and universities, a person is much more ready to take on independent lab work when they leave your school.

What did you like least about the School of Mathematical and Natural Sciences? (Weaknesses)

Some of the depts. are not able to offer enough courses due to a lack of demand.

What changes do you recommend?

Encourage more students to get into the areas of math and science, try to involve the students in more activities in the school (I believe that is already happening) as a recruiting tool.

Try to help with job placement, a possible way would be links on your web page to job listings that you know about.

Is there anything else you would like to add?

I would not trade my time at UAM and in the School of Math and Science for anything in the world. It is hard for me to believe that Dr. Annulis, Bacon, and Godwin have retired. I wish for them and all of the people that I knew there the very best in the world. If anyone from there makes it up this way, please look me up.

The following information is optional:

Name: Name removed

Major(s): Chemistry

Minor(s): Biology

E-mail address

What are your plans after graduation?

After my next graduation (grad school with a PhD, Fall 09) I plan to be a faculty member at a small college or university.

Please drop off your survey to the Math/Science Office in the Science Center or mail to:

Graduate Survey

School of Mathematical and Natural Sciences

P.O. Box 3480

Monticello, AR 71656-3480

Feel free to drop in for a visit. There's usually coffee available. Student organizations have tailgating at football games, etc...

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If you don't receive an annual newsletter by mail or electronically, please contact the Math/Science office at 870-460-1016.

Mathematical and Natural Sciences Graduate Survey

Your response is very important to the internal assessment of our programs. Please complete the following. Feel free to give specific examples related to your job, your continued education, or about UAM courses that you have taken. Feel free to attach additional pages if needed. This page is also available on the Math/Science homepage and may be submitted by email as an attachment

Do you feel that UAM prepared you for your professional life?

Yes, I feel that UAM prepared me for my professional life.

What did you like most about the School of Mathematical and Natural Sciences? (Strengths)

Ease of communication between student and professors and how professors considered the curriculum one might encounter w/ their further education and on the field. Also, how they were accommodating in helping one achieve their goals towards their professional education.

What did you like least about the School of Mathematical and Natural Sciences? (Weaknesses)

What changes do you recommend?

Is there anything else you would like to add?

For a small school, I feel that UAM is very fortunate to have professors who enjoy and are dedicated to their profession. I could say that lack of better equipment would be a weakness of the School of Mathematical and Natural Sciences but from my experience, I have yet to see this as a disadvantage from my counterparts who went to larger schools w/ better equipment but less personal interaction w/ their professors.

The following information is optional:

Name: Name removed

Major(s): Biology

Minor(s): Natural Science

E-mail address

What are your plans after graduation?

Pharmacy School

Please drop off your survey to the Math/Science Office in the Science Center or mail to:

Graduate Survey

School of Mathematical and Natural Sciences

P.O. Box 3480

Monticello, AR 71656-3480

Feel free to drop in for a visit. There's usually coffee available. Student organizations have tailgating at football games, etc...

You are always welcome to join in. The newsletter is produced periodically. (Usually early Fall)

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Mathematical and Natural Sciences Graduate Survey

Your response is very important to the internal assessment of our programs. Please complete the following. Feel free to give specific examples related to your job, your continued education, or about UAM courses that you have taken. Feel free to attach additional pages if needed. This page is also available on the Math/Science homepage and may be submitted by email as an attachment

Do you feel that UAM prepared you for your professional life?

Yes, The basics I got from UAM helped me tremendously through my graduate career. There were a few of my fellow classmates that knew more about a specific topic than I did, but I was strong in essentially all areas that were studied in graduate school. I struggled in no class in graduate school (in chem engineering)

What did you like most about the School of Mathematical and Natural Sciences? (Strengths)

Small classes, personal attention from professors, and undergraduate research experience really helped me after I got to Tulane.

What did you like least about the School of Mathematical and Natural Sciences? (Weaknesses)

Lack of variety of classes. It would have been beneficial to me to have more applied mathematics. Also, a course in polymer chemistry and more specialized chemistry classes would have been beneficial.

What changes do you recommend?

Need more professors who do applied research to enhance the undergraduate experience. This would be a great summer option. Better lab equipment in chemistry and physics.

Is there anything else you would like to add?

If at all possible, a class in scientific writing would be very nice to prepare students for writing proposals, grant applications, and publications.

The following information is optional:

Name: Name removed

Major(s): Chemistry and Mathematics

Minor(s):

E-mail address

What are your plans after graduation?

I plan on working another year on the postdoc. If I decide to go into academia, I'll probably do another postdoc somewhere else. If I go into industry, I'll go ahead and accept a position in chemical engineering. I have several offers already.

Please drop off your survey to the Math/Science Office in the Science Center or mail to:

Graduate Survey

School of Mathematical and Natural Sciences

P.O. Box 3480

Monticello, AR 71656-3480

Feel free to drop in for a visit. There's usually coffee available. Student organizations have tailgating at football games, etc...

You are always welcome to join in. The newsletter is produced periodically. (Usually early Fall)

If you don't receive an annual newsletter by mail or electronically, please contact the Math/Science office at 870-460-1016.

Appendix G

Graduation Numbers by major per year
Number of majors per year

Math and Science Graduates by Year by Major

	04-05	05-06	06-07	07-08	08-09	09-10	10-11	Page Total	10 yr Mean	3 yr Mean
Biology	10	12	9	15	12	10	7	152	10.0	9.7
Chemistry	2	2	1	2	4	4	6	51	2.9	4.7
Mathematics	9	5	5	6	2	4	0	66	4.4	2.0
Natural Science(added 2001)	1	4	3	7	2	8	4	33	3.3	4.7
Total	22	23	18	30	20	26	17	276	20.6	21.1

	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04
Biology	6	10	11	13	6	6	9	4	12
Chemistry	3	4	3	3	5	4	2	2	4
Mathematics	5	2	5	1	4	5	5	5	3
Natural Science(added 2001)	-	-	-	-	-	-	0	0	4
Total	14	16	19	17	15	15	16	11	23

Number of Majors per Class Level per year

Fall term of year	01	02	03	04	05	06	07	08	09	10
Allied Health										
Freshman	17	16	13	27	16	13	28	23	16	25
Sophomore	8	9	5	5	8	8	8	8	11	6
Junior	1	3	4	2	4	3	4	3	4	4
Senior	0	2	2	0	3	0	0	2	1	0
Total	26	31	24	34	32	33	48	41	41	35

Fall term of year	01	02	03	04	05	06	07	08	09	10
Biology										
Freshman	9	13	14	10	10	11	9	8	9	7
Sophomore	5	6	12	8	7	4	10	7	11	8
Junior	6	9	8	10	7	8	7	8	9	10
Senior	7	10	11	13	11	13	18	15	17	12
Total	27	40	45	44	38	39	47	39	52	37

Fall term of year	01	02	03	04	05	06	07	08	09	10
Chemistry										
Freshman	1	2	3	3	5	6	3	1	3	5
Sophomore	2	3	2	2	5	3	2	1	0	2
Junior	2	3	2	2	1	5	7	2	2	2
Senior	6	3	0	2	3	2	2	8	5	9
Total	11	12	8	9	14	19	14	12	12	18

<i>Fall term of year</i>	01	02	03	04	05	06	07	08	09	10
Mathematics										
Freshman	3	4	3	3	7	4	6	3	5	7
Sophomore	3	6	8	6	3	5	7	7	5	5
Junior	4	3	5	5	6	5	1	5	5	3
Senior	8	6	11	13	7	7	8	2	5	5
Total	21	19	27	27	23	22	23	18	22	20

<i>Fall term of year</i>	01	02	03	04	05	06	07	08	09	10
Natural Science										
Freshman	1	3	1	2	2	1	1	0	0	1
Sophomore	1	1	3	2	0	0	1	1	0	1
Junior	0	1	3	2	2	3	2	1	0	1
Senior	0	2	2	4	8	6	6	4	4	3
Total	2	7	9	10	12	10	11	7	5	6

<i>Fall term of year</i>	01	02	03	04	05	06	07	08	09	10
Pre-Engineering										
Freshman	9	8	6	4	7	11	7	5	10	6
Sophomore	2	3	1	1	2	3	3	2	2	2
Junior	0	0	2	0	0	0	1	1	2	0
Senior	0	0	0	0	0	0	0	0	0	0
Total	11	11	10	5	9	15	14	10	14	8

<i>Fall term of year</i>	01	02	03	04	05	06	07	08	09	10
Pre-Medicine										
Freshman	24	21	26	28	19	30	20	16	14	28
Sophomore	14	20	9	5	5	7	5	7	4	2
Junior	11	7	10	7	5	2	3	5	4	2
Senior	5	5	7	3	2	0	0	1	0	1
Total	57	54	53	45	36	60	49	49	41	33

<i>Fall term of year</i>	01	02	03	04	05	06	07	08	09	10
Pre-Pharmacy										
Freshman	15	10	11	13	14	14	16	15	8	14
Sophomore	5	11	3	6	9	8	3	9	7	3
Junior	4	3	9	2	4	6	3	3	4	6
Senior	3	4	3	3	1	4	0	1	0	0
Total	28	30	27	24	31	39	29	41	24	23
Total Unit	183	204	203	198	195	237	235	217	211	180

Appendix H

Example Letter and Email to Reconnect with Potential Degree Completion or Professional School Candidates

Sample letter sent to student that required only a few courses to complete degree

September 15, 2010

{Name 1} {Name 2}
{Address 1}
{Address 2}
{City} {State} {Zip}

Dear {Name 1}

I am writing this letter to encourage you to finish your {major} degree. You are extremely close to finishing, and I would like to see you complete the degree. Of course, you can take courses on our campus, possibly on-line courses from our campus, or even courses at another university and transfer them back to UAM. If you are interested, contact me by telephone at 870-460-1116 or by e-mail at bramlett@uamont.edu.

You may consider changing your major from Biology to Natural Sciences (Life Science Option). It appears that you lack only 2 elective courses to complete that degree; however you will likely need to take a 3 specific courses and one elective class in order to have enough upper level hours to meet the graduation requirements in Biology. Either degree will allow you to enter the MAT program and teach science, as you previously indicated. Another option is the Bachelor of General Studies degree, which is a new degree that was just approved at UAM. In reviewing your transcript, it appears that you would need approximately the same number of classes as needed for the Natural Science degree. We will review all options to see which will allow you to complete your degree in a timely fashion.

I'd love to hear from you even if you aren't interested in returning at this time.

Take care,

J. Morris Bramlett, Ph.D.
Dean, School of Mathematical and Natural Sciences

Sample email sent to student that graduated, but not in area that originally planned.

December 12, 2010

Dear {Name}

I heard through the grapevine that you are selling real estate and not having a good time. I know you originally started your undergraduate career in pre-medicine and were doing very well when you were encouraged by your coach to change your major to something else in order to have fewer lab conflicts with practice. It saddened me to lose a student of your quality for this reason.

Would you be interested in coming back to pursue the pre-med career? With your GPA, I'm certain that you will have an excellent chance of being accepted to UAMS or even other programs in the region. Think it over, and if you are interested, let me know. I'll be glad to help you design a plan of coursework that will get you to the point of applying in one year, and entry into medical school in two years. It will require General Chemistry in summer school this summer and fairly heavy course loads with predominantly science courses for the next four semesters. Even if you are interested in taking these courses at another university, I'd love for you to fulfill your dream. There are other options in the medical field if you are interested. Let me know if I can help in any way.

Morris