

At NMHU, co-curricular activities are defined as out-of-class experiences that complement and extend the formal learning experience of a course or academic program. Co-curricular activities develop a student's social, intellectual, cultural, democratic, civic, and aesthetic domains. They are supervised and/or financed by the institution and facilitate the attainment of NMHU's four essential traits (or student learning outcomes). These experiences are voluntary, ungraded, and non-credited, although they may be compensated through student employment.

Four identified traits/student learning outcomes that the NMHU community of faculty, students and staff identified that our graduates are expected to display:

- Mastery of content knowledge and skills
- Effective communication skills
- Critical and reflective thinking skills
- Effective use of technology

Program Name: ARMAS Center

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Program Mission: The mission of our center is to provide comprehensive support to Science Technology Engineering and Math (STEM) students and faculty, recognizing our historical commitment as an Hispanic Serving Institution.

Intended Audience:

The ARMAS Center serves Highlands(Main) Campus students by providing Supplemental Instruction in STEM gateway courses, math tutoring in courses ranging from Math 120 to Math 211 and STEM internships in addition to providing a comfortable lounge, computer lab, science textbook library, educational resource area, mini-kitchen, quiet study areas and rooms for Supplemental Instruction and tutoring. While our main focus is on STEM students, the Center is open to all students and many students who utilize our services, particularly the math tutoring and computers, are non-STEM majors. Over the past year we have seen a large increase in the number of students utilizing the Center. We believe this is largely due to the closing of the Student Support Services (TRIO) program as well as increased use of the Center by athletes who are required to do study hall hours.

ARMAS Support Services include:

- Supplemental Instruction in STEM gateway courses (General Biology, General Chemistry, Organic Chemistry, Physics, Calculus, Humans & Ecosystems)  
Supplemental Instruction (SI) is an academic support model developed by Dr. Deanna Martin at the University of Missouri-Kansas City (UMKC) in 1973 that uses peer-assisted study sessions to improve student retention and success within targeted historically difficult courses. ARMAS initiated the SI in STEM gateway courses at NMHU in 2009.
- Math tutoring in Math 120- Math 160
- STEM Textbook lending library
- STEM internship and research fellowship opportunities
- On-campus, academically-engaging student employment

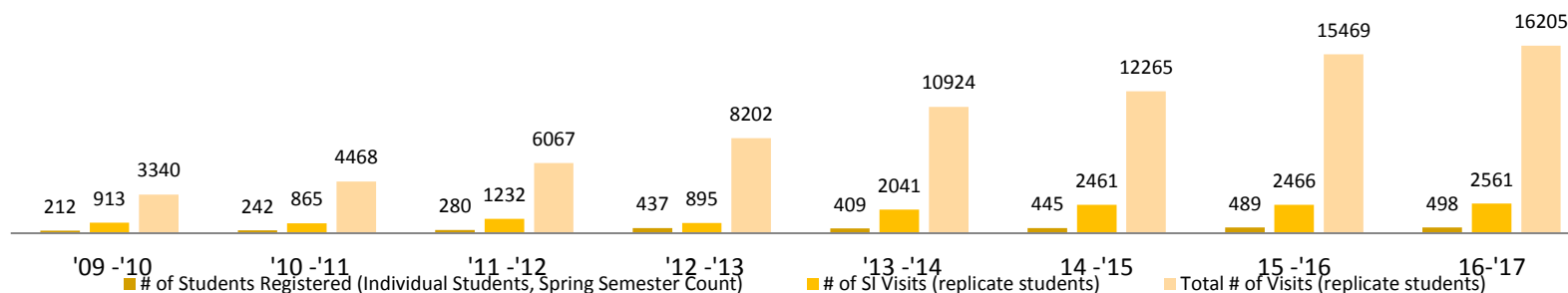
Student Use of the ARMAS Center:

Student utilization of the ARMAS Center is tracked by using Labtracker, a web-based program that was developed in-house to allow students to swipe their ID's (or enter their student id numbers) as they enter the Center and enter information on the reason for their visit. Labtracker connects with banner to allow ARMAS staff to disaggregate student use by demographics and major as well as compare student use with grades.

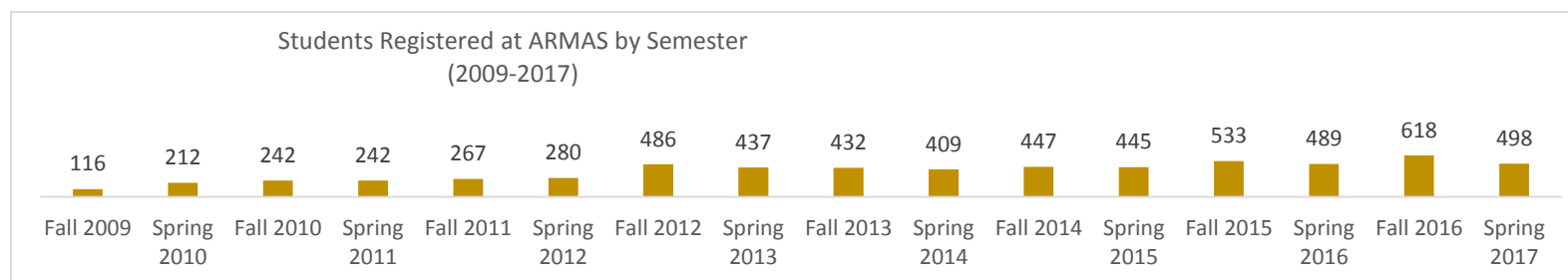
Summary of Student Utilization of your Program:

2016-2017 Use of the ARMAS Center by Reason Listed in Labtracker\*

Reason for Visit	2015-2016 Academic Year	2016-2017 Academic Year
Athletic Study Hall*	1375	5272
Computer Use	4174	4137
Informal Group Study	113	17
Math Tutoring	741	826
Self Study*	6101	2942
Supplemental Instruction	2464	2561
Textbook Use	478	324
Visit with Staff	46	59



There was an increase in total number of students registered at the Center from fall '15 to fall '16 as well as spring '16 and spring '17. There has also been a steady increase in use of the Center both in terms of overall use as well as use of Supplemental Instruction.



**Summary of Student Satisfaction Results:**

**1) Math Tutor Survey**

Surveys regarding math tutoring were handed out in selected Math 120, 140, 145, and 160 course. 77 students completed surveys. Of those 77, 19 (24.6%) attended tutoring at the ARMAS Center. Students indicated we could do a better advertising our services by asking the faculty to promote tutoring and tell them about the hours, posting flyers with the hours in every classroom and around campus. They also indicated we could improve services by having better snacks and keeping the noise level down. Among the 19 students who attended tutoring, 100% indicated that the tutors were able to help and that they increased their understanding of the material by attending. When asked about the effectiveness of having tutoring embedded in the class, 16 of the 19 (84%) indicated that it made tutoring more effective to have the tutors placed in the class.

**2) SI Final Survey – see attached (very long)**

**3) Intern Survey**

<b>INTERNSHIP EXPERIENCE: Please rate your level of satisfaction in the following areas:</b>	<b>Very Satisfied</b>	<b>Satisfied</b>	<b>Dissatisfied</b>	<b>Very Dissatisfied</b>	<b>Not Applicable</b>
Opportunity to apply what I learned in my STEM classes to my internship.	4/4 (100%)				
Opportunity to gain professional work-place experiences during my internship.	4/4 (100%)				
Opportunity to develop work-place communication skills.	4/4 (100%)				
Opportunity to network with professionals during my internship.	2/4 (50%)	2/4 (50%)			
Opportunity to develop teamwork and leadership skills.	2/4 (50%)	2/4 (50%)			
Opportunity to receive meaningful feedback.	2/4 (50%)	2/4 (50%)			
Overall quality of my internship assignment.	3/4 (75%)	1/4 (25%)			
Overall satisfaction with internship assignment.	3/4 (75%)	1/4 (25%)			
Assistance with managing my internship.	3/4 (75%)	1/4 (25%)			

**4) Center Survey Results**

<b>ARMAS Center Survey Results (approximately 60 surveys completed)</b>												
	<b>Very Dissatisfied</b>	<b>VD %</b>	<b>Dissatisfied</b>	<b>D%</b>	<b>Neutral</b>	<b>N%</b>	<b>Satisfied</b>	<b>S%</b>	<b>Very Satisfied</b>	<b>vd%</b>	<b>Total</b>	<b>S+VS%</b>
Welcoming Environment	3	5%	0	0%	0	0%	8	13%	53	83%	64	95%
Ease of Access to Computers	1	2%	1	0%	0	0%	7	11%	54	86%	63	97%
Ease of Access to Printing	0	0%	1	0%	0	0%	7	11%	55	87%	63	98%
Helpfulness of ARMAS Staff	0	0%	1	3%	2	3%	4	6%	55	89%	62	95%
Taken care of in a professional and courteous manner	0	0%	2	2%	1	2%	9	15%	49	80%	61	95%
Availability of Textbooks	1	2%	2	8%	5	8%	12	20%	41	67%	61	87%
Availability of Math Tutors	0	0%	2	3%	2	3%	12	20%	44	73%	60	93%

Availability of Supplemental Instruction Leaders	0	0%	2	7%	4	7%	15	25%	39	65%	60	90%
Overall satisfaction with the ARMAS Center	1	2%	0	2%	1	2%	6	10%	52	87%	60	97%

	Not at All		A little		Somewhat		A Lot		N/A-Did not experience		Total
The Supplemental Instruction and math tutoring available through the center has helped me successfully complete coursework	1	2%	2	3%	0	0%	48	76%	12	19%	63
The knowledge and skills of the SILs/tutors helped me to better understand my course lessons.	1	2%	0	0%	5	8%	51	81%	6	10%	63
My SIL/tutor saw potential and believed in me.	1	2%	1	2%	8	13%	45	73%	7	11%	62
Meetings with my SIL/tutor encouraged me in my career interests.	1	2%	3	5%	6	9%	43	67%	11	17%	64
The materials (e.g. financial package, career information, information about the Center, and/or STEM program information) I received from the Center were helpful.	1	2%	0	0%	13	21%	41	66%	7	11%	62
The resources available through the Center are appropriate for my science, technology, engineering, or math coursework.	0	0%	0	0%	7	11%	51	82%	4	6%	62
The ARMAS website has information useful for my career development.	1	2%	3	5%	8	13%	34	55%	16	26%	62

**Center Use Survey Comments:**

Many positive responses but suggestions included:

- Longer Hours.
- Purchasing earphones with speakers.
- Purchasing additional textbooks.
- Creating more private cubicles for math tutor support.
- Additional tutors during “high stress times” (finals, mid-terms)
- Improving advertising the services available at the Center
- Keeping the Center cleaner (especially the “quiet rooms”)
- Increase the number of classes that have SILs
- Add an accounting tutor
- More/better snacks

Student Learning Outcome:	University Trait(s) linked to which it is linked Learning Outcomes	Assessment Measurement Results	Outcome Achieved? (0 = No, 1 = Yes)	Plan for Improvement
1. <i>Supplemental Instruction Leaders (SIL) will translate course content into sessions plans implemented three times a week.</i>	<i>Effective Communication &amp; Mastery of Content, Critical Thinking</i>	<p>Target: <i>85% of evaluated session plans will either achieve average or high ratings.</i></p> <p>Actual: 20/22 (91%) sessions plans rated throughout the semester were rated as either average or high.</p>	1	Revise the evaluation matrix to allow more refinement in the scores.
2. <i>Supplemental Instruction Leaders (SIL) will be able to facilitate collaborative learning.</i>	<i>Effective Communication &amp; Critical Thinking</i>	<p>Target: <i>80% of diagrams will reflect a collaborative learning experience.</i></p> <p>Actual: All observed sessions that were rated (100%) reflected collaborative learning, however 6 of the 22 sessions observed did not have students present (27%) and were therefore not rated.</p>	1	<p>Revise the method of assessing collaborative learning.</p> <p>Re-assess if students not present in session rather than mark n/a.</p>
3. <i>Supplemental Instruction (SI) participants will demonstrate content mastery.</i>	<i>Mastery of Content</i>	<p>Target: <i>a) Pass rates of SI participants will be over 75% in courses with SI. b) Over 30% of students in courses with SI will utilize SI services.</i></p> <p>Actual:</p>	1 (for a & b) 0 (c partially achieved)	In terms of percent attendance and percent of participants receiving an ABC, we are meeting our goals. We may need to revisit our goal of 30% attendance and increase the target. However, in some classes we are not having students come to 3 or more sessions (also a goal).

	% SI Attendance	%ABC	%SI Attendance	%ABC
BIO 110	31%	87%	35%	77%
BIO 110-LC	50%	78%	n/a	n/a
BIO 211-LC	59%	100%	n/a	n/a
BIO 211	49%	89%	45%	69%
Bio 212	26%	86%	44%	94%
CHEM 211	54%	68%	71%	82%
CHEM 212	83%	90%	67%	61%
CHEM 341/342	69%	75%	72%	94%
FOR 105-LC	67%	93%	n/a	n/a
FOR 105	44%	67%	39%	87%
FOR 340	44%	64%	69%	100%
PHYS 151/152	95%	72%	66%	100%
Math 211	n/a	n/a	79%	91%

**c) Target: Over 50% of students using SI will attend 3 or more sessions each semester**

**Actual:**

% Attending 3 or more sessions		
	Fall 2016	Spring 2017
BIO 110	27%	38%
BIO 110-LC	0%	n/a
BIO 211-LC	90%	n/a
BIO 211	61%	46%
Bio 212	14%	44%
CHEM 211	76%	79%
CHEM 212	100%	69%
CHEM 341/342	85%	72%
FOR 105-LC	25%	n/a
FOR 105	71%	73%
FOR 340	36%	56%
PHYS 151/152	83%	86%
Math 211	n/a	78%

This will be an area of focus for improvement. We will consider incentives and earlier intervention in classes with low attendance rates. We will also work closely with those faculty to improve marketing and alignment with course objectives. This will be an area we will continue to monitor. It should be noted that freshman/intro classes have a bigger problem with both attendance than the upper level courses.

		<p>The classes that did not meet the 50% of SI participants attending SI included:                  Biology 110- both semesters.                  Biology 211- spring (but very close)                  Biology 212- fall                  For 105- fall learning community                  For 340- fall</p>																																					
<p>4. <i>Students attending math tutoring will demonstrate content mastery.</i></p>	<p><i>Mastery of Content</i></p>	<p>a) Target: <i>Pass rates of participants in math tutoring will be over 75% in their associated math courses.</i></p> <p><i>Over 30% of students in courses with SI will utilize SI services.</i></p> <p><i>Over 50% of students attending math tutoring will attend more than three times per semester.</i></p> <p>Actual:</p> <table border="1" data-bbox="617 699 1442 1084"> <thead> <tr> <th></th> <th colspan="3">Fall 2016</th> <th colspan="3">Spring 2017</th> </tr> <tr> <th></th> <th>% of Students Attending Tutoring Earning ABC</th> <th>% Attending Tutoring</th> <th>% of Tutoring Participants attending more than 3 times</th> <th>% of Students Attending Tutoring Earning ABC</th> <th>% Attending Tutoring</th> <th>% of Tutoring Participants attending more than 3 times</th> </tr> </thead> <tbody> <tr> <td>Math 120</td> <td>76%</td> <td>24%</td> <td>27%</td> <td>63%</td> <td>28%</td> <td>37%</td> </tr> <tr> <td>Math 140</td> <td>46%</td> <td>20%</td> <td>65%</td> <td>60%</td> <td>25%</td> <td>57%</td> </tr> <tr> <td>Math 160</td> <td>70%</td> <td>22%</td> <td>40%</td> <td>46%</td> <td>30%</td> <td>31%</td> </tr> </tbody> </table>		Fall 2016			Spring 2017				% of Students Attending Tutoring Earning ABC	% Attending Tutoring	% of Tutoring Participants attending more than 3 times	% of Students Attending Tutoring Earning ABC	% Attending Tutoring	% of Tutoring Participants attending more than 3 times	Math 120	76%	24%	27%	63%	28%	37%	Math 140	46%	20%	65%	60%	25%	57%	Math 160	70%	22%	40%	46%	30%	31%	<p>0</p>	<p>The developmental math program is being re-designed and support for tutor training will be provided by the STEMfast grant. There will be opportunities to work more closely with faculty to improve delivery of math tutoring services.</p> <p>Based on input from surveys as well as percent attendance and number of students attending more than 3 times, we will be more aggressive in promoting tutoring services through increased advertising and focus on improving the training provided to the math tutors.</p>
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<p>5. <i>ARMAS interns will connect course content to real world experiences.</i></p>	<p><i>Mastery of Skills, Critical Thinking, Use of Technology, Effective Communication</i></p>	<p>Target: <i>Mentors will rate 80% of interns as average or high in each area.</i></p> <p>Actual: 6 mentors completed the mentor surveys for the 6 PROPEL interns. 100% of the interns received ratings of average or high in the areas of problem-solving ability (80% high), Written Communication (100% high), Oral Communication (100% high), and Use of Technology (80% high).</p>	<p>1</p>	<p>No change needed.</p>																																			

Summary of the Outcomes Assessment Data. [Did students achieve the outcomes? Which outcomes can be achieved? Briefly analyze the results].

We met three of the five learning outcomes. These included:

1.

<i>Supplemental Instruction Leaders (SIL) will translate course content into sessions plans implemented three times a week.</i>	<i>Effective Communication &amp; Mastery of Content, Critical Thinking</i>	<i>A sample of two session plans per semester for each SIL will be assessed for quality using a rubric utilizing a low, average, and high scale.</i>	<i>Throughout each semester.</i>	<i>85% of evaluated session plans will either achieve average or high ratings.</i>
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2.

<i>Supplemental Instruction Leaders (SIL) will be able to facilitate collaborative learning.</i>	<i>Effective Communication &amp; Critical Thinking</i>	<i>Interaction diagrams will be assessed twice each semester for each SIL during session observations.</i>	<i>Throughout each semester.</i>	<i>80% of diagrams will reflect a collaborative learning experience.</i>
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3.

<i>ARMAS interns will connect course content to real world experiences.</i>	<i>Mastery of Skills, Critical Thinking, Use of Technology, Effective Communication</i>	<i>Supervising mentors will complete a mentor survey that assesses mentees problem-solving, communication and use of technology on a scale of low, average, high.</i>	<i>End of each semester.</i>	<i>Mentors will rate 80% of interns as average or high in each area.</i>
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The following outcome was partially achieved.

<p><i>Supplemental Instruction (SI) participants will demonstrate content mastery.</i></p>	<p><i>Mastery of Content</i></p>	<p><i>Pass rates in courses with SI will be tracked.</i></p> <p><i>Percent of students using SI.</i></p> <p><i>Percent of students using SI who attend three or more sessions</i></p>	<p><i>End of each semester.</i></p>	<p><i>Pass rates of SI participants will be over 75% in courses with SI.</i></p> <p><i>Over 30% of students in courses with SI will utilize SI services.</i></p> <p><i>Over 50% of students using SI will attend more than three sessions each semester</i></p>
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In terms of percent attendance and percent of participants receiving an ABC, we are meeting our goals. However, we may need to revisit our goal of 30% attendance and increase the target.

In some classes we are not having students come to 3 or more sessions which was part of the outcome we hoped to achieve . We will consider incentives and earlier intervention in classes with low attendance rates. We will also work closely with those faculty to improve marketing and alignment with course objectives. This will be an area we will continue to monitor. It should be noted that freshman/intro classes have a bigger problem with both attendance than the upper level courses.

We had the least success with the following learning outcomes:

<p><i>Students attending math tutoring will demonstrate content mastery.</i></p>	<p><i>Mastery of Content</i></p>	<p><i>Pass rates in courses with math tutors will be tracked.</i></p> <p><i>Percent of students using Math tutoring.</i></p> <p><i>Percent of students attending math tutoring who attend three or more times/semester</i></p>	<p><i>End of each semester.</i></p>	<p><i>Pass rates of participants in math tutoring will be over 75% in their associated math courses.</i></p> <p><i>Over 30% of students in courses with SI will utilize SI services.</i></p> <p><i>Over 50% of students attending math tutoring will attend more than three times per semester.</i></p>
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We did not achieve the desired pass rates, percent of students using the tutoring services or the percent of students who use the services on a regular basis.

How are you going to improve the program for next year? Which outcomes will you target, and what specifics steps will you take for improvement?

We will be working on improving attendance/participation primarily in math tutoring\* but also in supplemental instruction in the few courses that did not achieve the target rate of 30% attendance (Biology 110 and Forestry 105). The surveys indicated that we could improve publicity about the ARMAS Center services so this will be a focus for the upcoming year. Additionally we will be working on improving training of math tutors and increasing our partnerships with the math faculty and STEMfast grant to align tutoring efforts with the curriculum redesign that is occurring.

\*There will be changes in where math tutoring is offered (now will be offered through the STEMfast lab associated with ARMAS) so we will need to revise this portion of the CCOA plan.

**What were the results of the discussion with peer reviewers and the joint meeting between the Co-Curricular and Assessment Committees?**

There was a recognition that separating out student learning outcomes from student satisfaction and student perception was difficult and something that all the programs need to work on in our next cycle. We need to continue to improve communication between co-curricular and academic programs, especially in developing shared learning outcomes and figuring out how best co-curricular programs can support the development of these through their programs. It might make sense to have small meetings that join particular academic programs with their associated co-curricular programs rather than the larger meeting so that specific outcomes and plans can be developed.

**Do any improvements need to be made to your plan? How will those be implemented?**

We conducted too many surveys and asked some questions that did not provide meaningful data. We will review each of the assessment instruments (surveys and rubrics) and work on improving them for next year as well as reviewing our targets to see if we need to adjust them.