

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: Achieving in Research, Mathematics And Science (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 the Highlands Main Campus students. by providing Supplemental Instruction (SI) 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 SI and tutoring. Located in the Engineering Building (adjacent to the Hilton Science Building), the Center has a comfortable lounge, computer lab, science textbook and educational resource area, mini-kitchen, quiet study areas and rooms for Supplemental Instruction and math tutoring. It is open from 8am to 10 pm Monday-Thursday, 8 am-5 pm on Fridays and 5 pm- 10 pm on Sundays. The Center is a space where students come to meet with their friends for study groups, interact with faculty and Center staff, research internship and scholarship opportunities and, most importantly, study. 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.

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 number(s) 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.

- Describe how you plan to measure student satisfaction with your program:
1. Math Tutor Survey
  2. SI mid-term and final survey of student participants
  3. Intern survey
  4. Center Use Survey

Assessment of Student Learning associated with participation at the ARMIAS Center:

Student Learning Outcome:	University Trait(s) linked to which it is linked Learning Outcomes	Measures of Assessment	Timeline for Measurement	Threshold to Determine if outcome has been achieved
<p><b>Supplemental Instruction Leaders (SIL) will translate course content into sessions plans implemented three times a week.</b></p>	<p><b>Effective Communication &amp; Mastery of Content, Critical Thinking</b></p>	<p><b>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.</b></p>	<p><b>Throughout each semester.</b></p>	<p><b>85% of evaluated session plans will either achieve average or high ratings.</b></p>
<p><b>Supplemental Instruction Leaders (SIL) will be able to facilitate collaborative learning.</b></p>	<p><b>Effective Communication &amp; Critical Thinking</b></p>	<p><b>Interaction diagrams will be assessed twice each semester for each SIL during session observations.</b></p>	<p><b>Throughout each semester.</b></p>	<p><b>80% of diagrams will reflect a collaborative learning experience.</b></p>
<p><b>Supplemental Instruction (SI) participants will demonstrate content mastery.</b></p>	<p><b>Mastery of Content</b></p>	<p><b>Pass rates in courses with SI will be tracked.</b> <b>Percent of students using SI.</b> <b>Percent of students using SI who attend three or more sessions</b></p>	<p><b>End of each semester.</b></p>	<p><b>Pass rates of SI participants will be over 75% in courses with SI.</b> <b>Over 30% of students in courses with SI will utilize SI services.</b> <b>Over 50% of students using SI will attend more than three sessions each semester</b></p>
<p><b>Students attending math tutoring will demonstrate content mastery.</b></p>	<p><b>Mastery of Content</b></p>	<p><b>Pass rates in courses with math tutors will be tracked.</b> <b>Percent of students using Math tutoring.</b> <b>Percent of students attending math tutoring who attend three or more</b></p>	<p><b>End of each semester.</b></p>	<p><b>Pass rates of participants in math tutoring will be over 75% in their associated math courses.</b> <b>Over 30% of students in courses with SI will utilize SI services.</b></p>

<p>ARMAS interns will connect course content to real world experiences.</p>	<p>Mastery of Skills, Critical Thinking, Use of Technology, Effective Communication</p>	<p>Supervising mentors will complete a mentor survey that assesses mentees problem-solving, communication and use of technology on a scale of low, average, high.</p>	<p>End of each semester.</p>	<p>Over 50% of students attending math tutoring will attend more than three times per semester. Mentors will rate 80% of interns as average or high in each area.</p>
<p></p>	<p></p>	<p></p>	<p></p>	<p></p>

**Report on Student Utilization of the ARMAS Center:**

**Report on ARMAS participants' satisfaction with ARMAS Services:**

Student Learning Outcome:	Assessment Measurement Results	Outcome Achieved? (0= No, 1= Yes)	Plan for Improvement
<p><b>Supplemental Instruction Leaders (SIL) will translate course content into sessions plans implemented three times a week.</b></p>			
<p><b>Supplemental Instruction Leaders (SIL) will be able to facilitate collaborative learning.</b></p>			
<p><b>Supplemental Instruction (SI) participants will demonstrate content mastery.</b></p>			
<p><b>Students attending math tutoring will demonstrate content mastery.</b></p>			
<p><b>ARMAS Interns will connect course content to real world experiences.</b></p>			



## Questionnaire on ARMAS Math tutoring

1. Course: Math 120    Math 140    Math 160
2. Instructor:    Stovall                      Alford                      Martinez
3. Year of Study at Highlands:              Freshman    Sophomore    Junior    Senior
4. Planned Major:
5. What grade do you think you will be getting in this math class?    A    B    C    D    F
6. Have you attended the ARMAS Center for Math Tutoring?    Yes (if yes, go to #10)    No (if no, go to #9)

7. If no, please answer the following:

Do you think your grade could improve if you went to tutoring? Y N

Did you know that math tutoring was available at ARMAS from 8 am to 10 pm Monday-Thursday, 8 am to 5 pm on Fridays and Sundays from 5 pm to 10 pm? Y N

What could ARMAS do to better advertise the tutoring services at ARMAS?

Do you have any concerns about the tutoring services available through ARMAS? If so, please list:

8. If you have come to ARMAS for math tutoring, please answer the following and add any additional comments you think we need to know:

About how many times have you come to ARMAS?    Once    2-4    5-7    7-9    10+

How did you find out about math tutoring available at ARMAS?

Was ARMAS (front desk, math tutors, and staff) friendly and welcoming? Y N

Comments:

Was the math tutor able to help you? Y N

Comments:

Did attending tutoring help you understand the material better? Y N

Comments:

Did attending tutoring increase your confidence in your math abilities? Y N

Comments:

Was attending tutoring at ARMAS a good learning experience? Y N

Comments:

Does have the tutor in the class make the tutoring more effective? Y N

Comments:

What suggestions do you have for improving ARMAS math tutoring services?



## ARMAS Center Survey

Please rate your level of satisfaction with the services you received while visiting the ARMAS Center using the following scale:

	Very Dissatisfied -1	Dissatisfied-2	Neutral-3	Satisfied-4	Very Satisfied-5
Welcoming environment	1	2	3	4	5
Ease of access to computers	1	2	3	4	5
Ease of access to printing	1	2	3	4	5
Helpfulness of ARMAS staff	1	2	3	4	5
Taken care of in a professional and courteous manner	1	2	3	4	5
Availability of Textbooks	1	2	3	4	5
Availability of Math Tutors	1	2	3	4	5
Availability of Supplemental Instruction Leaders	1	2	3	4	5
Overall satisfaction with the ARMAS Center	1	2	3	4	5

What suggestions do you have to improve the ARMAS Center?

Comments:

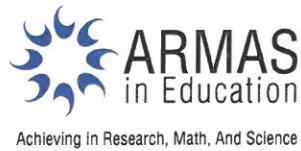


## ARMAS INTERNSHIP SURVEY

My internship was with a (circle one):    NMHU Research Faculty    Community Partner

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

- 1. List at least 3 techniques or skills that you learned during your internship?**
  
  
  
- 2. What were the best aspects of your internship experience? Why?**
  
  
  
- 3. How has this internship impacted your educational experience at Highlands?**
  
  
  
- 4. What could be done to improve the program for future interns?**



## Student Evaluation of Supplemental Instruction Experience

We in the ARMAS Center hope our supplemental Instruction sessions have helped you during this semester. Please take a moment to complete the following form to help us evaluate and ultimately improve our services. Thank you! This information is for research purposes only, and will in no way affect your grade.

Course \_\_\_\_\_

Instructor \_\_\_\_\_

➤ **If you DID NOT attend any SIL sessions, please complete ONLY Section 1 below:**

### SECTION 1

Please indicate the reason (s) that you did not attend any sessions:

I wanted to, but couldn't. The session schedule conflicted with work or other classes.

I didn't feel that the SIL sessions were necessary for me.

I intended to, but couldn't find the time.

By the time I decided I wanted to attend, I felt it was too late in the semester to begin attending.

Other \_\_\_\_\_

If SI is offered in any of your classes in the future, will you attend the sessions?

Yes       No       Undecided

In which classes would you like to see SI offered?

**IF YOU ATTENDED ONE OR MORE SIL SESSIONS for this class, PLEASE COMPLETE SECTION 2.**

## SECTION 2

Please circle the helpfulness of the SIL sessions and the SI Leader on a scale of 1 (poor, strongly disagree) to 5 (excellent, strongly agree).

### Supplemental Instruction Leader:

SIL's ability to lead discussions on important concepts

1 2 3 4 5  
(poor) (excellent)

SIL's ability to respond to questions

1 2 3 4 5  
(poor) (excellent)

SIL's ability to help organize material

1 2 3 4 5  
(poor) (excellent)

SIL's ability to create accepting atmosphere

1 2 3 4 5  
(poor) (excellent)

### Supplemental Instruction helped me by improving my:

Understanding of course content & concepts

1 2 3 4 5  
(disagree) (strongly agree)

Note taking skills in lectures

1 2 3 4 5  
(disagree) (strongly agree)

Exam taking techniques

1 2 3 4 5  
(disagree) (strongly agree)

Study techniques

1 2 3 4 5  
(disagree) (strongly agree)

Understanding of textbook material

1 2 3 4 5  
(disagree) (strongly agree)

Organization of my time

1 2 3 4 5  
(disagree) (strongly agree)

Understanding of lecture material

1 2 3 4 5  
(disagree) (strongly agree)

Assignments/ lab report writing

1 2 3 4 5  
(disagree) (strongly agree)

11. Will you continue to use the study skills you learned in this course in the future?

Yes       No       Undecided

12. Group work contributed positively to my successful completion of this course:

Yes       No       Undecided

13. Would you recommend the Supplemental Instruction Session format to other students?

Yes       No       Undecided

14. What do you think is the best method for ARMAS to publicize SIL Sessions?

15. What do you think your final grade **would have been** if you **had not** attended SI?

16. What do you think your final grade **will be after attending** Supplemental Instruction?

17. Did you ever consider withdrawing from this course?

18. How have the SIL Sessions helped you?

19. How could future SIL Sessions be improved?

Please add any comments, suggestions, or criticisms:

20. If SI is offered in any of your other classes in the future, will you attend the sessions?

21. In which classes would you like to see SI offered:

Please offer any other comments you would like ARMAS to know: