ASSESSMENT REPORT
2016-2017

Computer Science   **M.S./M.A.**
(Instructional Degree Program)   (Degree Level)

Program Mission:
The mission of the Media Arts and Computer Science (MACS) M.S./M.A. Program is to provide students with a challenging, market relavent and high-quality education in computer science with focused concentrations in media arts and computer science.

Student Learning Outcome 1:

Understand graduate level computer science and media arts terminology, technology and programming methods.

NMHU Traits Specifically Linked to Student Learning Outcome 1

- Mastery of Content Knowledge and Skills
- Critical and Reflective Thinking Skills
- Effective Use of Technology

First Means of Assessment for Outcome 1:

Final grade from CS 600: Principles of Computer Science and Media Arts; interdisciplinary investigation of terminology, roots, assumptions and principles that underlie the meaning of media arts and computer science. Students mastery will be measured with a B or better in the course.

Summary of Data:

Number of Students Meeting Criterion:	n/a	Number of Students Not Meeting Criterion:	n/a
Total Number of Students Assessed:	0	Percent of Students Meeting Criterion:	n/a

Second Means of Assessment for Outcome 1:

Final grade from CS 610: Synthesis of Media Arts and Computer Science; interdisciplinary synthesis of principles that underlie the merging disciplines of computer science and media arts. Students mastery will be measured with a C or better in the course.

Summary of Data:

Number of Students Meeting Criterion:	3	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	3	Percent of Students Meeting Criterion:	**100%**

Third Means of Assessment for Outcome 1:

Final grade from <u>CS 620: Multimedia Project Development;</u> study of the processes, techniques and tools used in the development of sophisticated multimedia-based projects which are focused both the theoretical as well as practical aspects of multimedia design and advanced programming methods. Students will complete a project that combines various tools and techniques discussed in the course. Final grades will be based on successful literature reviews, research methods, and presentations. This course will allow the student to do the initial research in to their field project or thesis. Students mastery will be measured with a C or better in the course.

Summary of Data:

Number of Students Meeting Criterion:	8	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	8	Percent of Students Meeting Criterion:	**100%**

Interpretation of Results for Outcome 1:

In this academic year, we experienced tremendous growth in our graduate student cohort. This group is entering with strong background skills in Data Science and Machine Learning. Additionally, there was a great increase in student numbers in our Network Security and Computer/Human Interface design courses.

<u>Student Learning Outcome 2:</u>

Successfully apply knowledge of advanced programming methodology to complex problems in computer science.

<u>NMHU Traits Specifically Linked to Student Learning Outcome 2</u>

- Critical and Reflective Thinking Skills
- Effective Use of Technology
- Effective Communication Skills
- Mastery of Content Knowledge and Skills

First Means of Assessment for Outcome 2:

Final defense from <u>CS 697: Field Project</u> evaluating current individual field research and writing in preparation of graduate field project. Students' ability to successfully accomplish the above topics in their field project will be measured by an achievement of

a P in their final grade and succesfull presentation and defense of their field project to their committee.

Summary of Data

Number of Students Meeting Criterion:	1	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	1	Percent of Students Meeting Criterion:	100%

Second Means of Assessment for Outcome 2:

Fianl defense from <u>CS 699: Thesis</u> evaluating current evaluating current individual field research and writing in preparation of graduate thesis. Students' ability to successfully accomplish the above topics in their thesis will be measured by an achievement of a P in their final grade and succesfull presentation and defense of their thesis to their committee.

Summary of Data:

Number of Students Meeting Criterion:	3	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	3	Percent of Students Meeting Criterion:	**100%**

Interpretation of Results for Outcome 2:

A large number of the students have successfully defended either their field projects or their theses and moved on to very successful careers in their field of choice. The faculty team is very pleased with the overall success of our students. But we will continue to improve teaching methods to enhance and improve overall success of these interdisciplinary students in media arts and computer science

Utilization of Results:

The results of our assessments will be made available to our external advisory board and faculty. The feedback we receive regarding the results of our assessment will close the loop on our assessment system. This will allow us to apply both our internal faculty critique (internal feedback) and external advisory board critique (external feedback) to provide the proper amount and direction for growth and change in the program.

Changes to Program Based on Results:

The need for additional graduate assistantships to increase graduate student numbers is highly desirable. The bottleneck to our growth is in funding options for our graduate students. Additionally, our tenure-tenure track faculty in CS is quite small. Currently, it's possible to cover course offerings and mentor graduate students with this number of

faculty, but in the near future it will be very difficult to give both areas fair coverage. We believe the need for more resources within the CS field are necessary for growth as well. By this, we mean it would greatly enhance our program to have the most current hardware platforms for computing as well as software to achieve growth in areas such as high performance computing, machine learning, data science, cyber-security, human-computer interface design and advanced visualization. Our hope is to identify infrastructure grants as well as external advisory board groups to this end.

Retention Strategies:

The greatest growth areas can be seen in both local and international students. Once again, retention for both these groups depends on graduate assistantship funding and tuition waivers. Our students have very limited budgets and we must address this problem by offering cost offsets such as graduate assistantships. The ability to offer some type of funding to our two groups of graduate students will increase our retention greatly. Additionally, the ability to offer external internship opportunities to both groups will also increase retention and success of these students after completion of their programs of study.