ASSESSMENT PLAN
2018-2019

Computer Science **B.S.**

Program Mission:
The mission of the Computer Science B.S. Program is to provide students with a challenging, market relevant and high-quality education in computer science.

Student Learning Outcome 1:

Understand basic computer science terminology, technology and programming methods.

NMHU Traits Specifically Linked to Student Learning Outcome 1

- Mastery of Content Knowledge and Skills

First Means of Assessment for Outcome 1:

Final grade from CS 144: Introduction to Computer Science; introduction to relevant terminology, technology and programming methods in computer science. Students mastery will be measured with a C or better in the course.

Summary of Data:

Number of Students Meeting Criterion:		Number of Students Not Meeting Criterion:	
Total Number of Students Assessed:		Percent of Students Meeting Criterion:	

Second Means of Assessment for Outcome 1:

Final grade from CS 145: Introduction to Object Oriented Programming; introduction to relevant object oriented terminology, technology and programming methods in computer science. Students mastery will be measured with a C or better in the course.

Summary of Data:

Number of Students Meeting Criterion:		Number of Students Not Meeting Criterion:	
Total Number of Students Assessed:		Percent of Students Meeting Criterion:	

Interpretation of Results for Outcome 1:

Student Learning Outcome 2:

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

NMHU Traits Specifically Linked to Student Learning Outcome 2

- Critical and Reflective Thinking Skills
- Effective Use of Technology

First Means of Assessment for Outcome 2:
Programming Labs and Exams from CS 245: Advanced Computer Programming evaluating current knowledge of software engineering, debugging/testing, simple data structures and object oriented programming principles. Students' ability to successfully accomplish the above topics in programming methods will be measured by an achievement of a C or above in their final grade.

Summary of Data

Number of Students Meeting Criterion:		Number of Students Not Meeting Criterion:	
Total Number of Students Assessed:		Percent of Students Meeting Criterion:	

Second Means of Assessment for Outcome 2:

Programming Labs and Exams from CS 345: Data and File Structures Methods of organizing data in memory and on peripheral devices and of accessing this information in an efficient manner. The course gives students experience with searching and sorting, trees, binary search trees, graphs, sequential files, merging files, and file update procedures. Prerequisite: CS 245 with a minimum grade of C.

Summary of Data:

Number of Students Meeting Criterion:		Number of Students Not Meeting Criterion:	
Total Number of Students Assessed:		Percent of Students Meeting Criterion:	

Third Means of Assessment for Outcome 2:

Programming Labs and Exams from CS 474. Machine Learning Algorithms
This course studies different machine learning techniques/ paradigms, including decision trees, neural networks, genetic algorithms, Bayesian learning, rule learning, and reinforcement learning. The applications of these techniques to problems in data analysis, knowledge discovery and data mining are discussed. Prerequisites: CS 245, MATH 320, and MATH 345.

Summary of Data:

Number of Students Meeting Criterion:		Number of Students Not Meeting Criterion:	
Total Number of Students Assessed:		Percent of Students Meeting Criterion:	

Interpretation of Results for Outcome 2:

Student Learning Outcome 3:

Effectively design/implement a relevant computer science project and communicate ideas, information and results, both verbally and in writing that (1) demonstrate consistent logic/critical thinking; (2) are well organized; (3) state and defend a thesis; and (4) demonstrate competent use of language in oral and written reports. (5) Project works as designed with a complete demonstration to students and faculty.

NMHU Traits Specifically Linked to Student Learning Outcome 3

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

First Means of Assessment for Outcome 3:
Final grade (Oral presentation/Technical report) from CS 481: Senior Design term project in which students submit project proposal to computer science faculty for approval/modification Once approved student will successfully integrate previous course work into project and submit technical report to faculty as well as do an oral presentation for all computer science students and faculty at the end of the term. Students' ability to effectively communicate scientific ideas, information, and results will be measured by achievement of a score of a C or better on final grade in the course.

Summary of Data

Number of Students Meeting Criterion:		Number of Students Not Meeting Criterion:	
Total Number of Students Assessed:		Percent of Students Meeting Criterion:	

Second Means of Assessment for Outcome 3:
Final grade (Oral presentation/Technical report) from CS 482: Senior Implementation term project in which students implement project proposal. A technical report to faculty as well as do an oral presentation for all computer science students and faculty at the end of the term will be required. Additionally, students will upload all source code and documentation to an open-source entity such as Github to build their professional portfolio as well as create a tracking/critique mechanism for faculty and external advisory board members to provide critical feedback to the students and program. Students'

ability to effectively communicate computer science ideas, information, and results will be measured by achievement of a score of a C or better on their final grade in the course.

Summary of Data

Number of Students Meeting Criterion:		Number of Students Not Meeting Criterion:	
Total Number of Students Assessed:		Percent of Students Meeting Criterion:	

Interpretation of Results for Outcome 3:

Utilization of Results:

Changes to Program Based on Results: N/A

Retention Strategies: