

ASSESSMENT REPORT
2022-2023

MS(CS)

Computer Science

(Instructional Degree Program)

M.S.

(Degree Level)

Program Mission:

The mission of the Computer Science B.S. Program is to deliver to students a challenging, market-relevant, and high-quality education in computer science. This includes hands-on experience with various programming languages such as Python, SQL, C++, Java, JavaScript, and other in-demand programming languages.

Student Learning Outcome 1:

Comprehend the terminology, technology, and programming methodologies of computer science. Additionally, possess expertise in algorithm design, data structures, programming paradigms, the software development lifecycle, debugging and issue resolution, programming languages, operating systems, and the implementation of coding best practices.

NMHU Traits Specifically Linked to Student Learning Outcome 1

- Comprehensive Understanding
- Mastery of Content Knowledge and Skills
- Critical Thinking
- Research Competence
- Technical Proficiency
- Application of Knowledge:
- Problem-Solving
- Self-Directed Learning

First Means of Assessment for Outcome 1:

The programming labs and exams in CS 5320: Advanced Database Management evaluate students' current understanding of concepts and techniques related to Big Data, Hadoop, NoSQL, ETL (Extract, Transform, Load), Spark, and Databricks. To gauge students' proficiency in these areas, their ability to successfully complete the programming tasks will be assessed, and a final grade of C or higher will indicate their successful comprehension of the material.

Summary of Data

Number of Students Meeting Criterion:	07	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	07	Percent of Students Meeting Criterion:	%100

2nd Means of Assessment for Outcome 1:

Programming Labs and Exams from CS 5740: Machine Learning Algorithms evaluating current knowledge of concepts and techniques and assessing learning outcomes related to machine learning algorithms typically involves evaluating a student's understanding of these algorithms, their ability to apply them to real-world problems, and their capacity to analyze and interpret the results. Students may be asked to complete a final project or research paper that involves a deeper exploration of a specific machine learning topic, algorithm, or application. Their work can be assessed based on the quality of research, methodology, and findings. The assessment in this course is centered on students' ability to effectively communicate computer science ideas, information, and project results. This ability is measured by achieving a score of C or higher in the final course grade, indicating their proficiency in conveying their computer science work and findings.

Summary of Data

Number of Students Meeting Criterion:	11	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	11	Percent of Students Meeting Criterion:	%100

3rd Means of Assessment for Outcome 1:

Assessing learning outcomes in CS 5770 parallel and distributed programming typically involves evaluating a student's understanding of fundamental concepts, their ability to design and implement parallel or distributed systems, and their capacity to analyze and optimize the performance of such systems. The assessment in this course is centered on students' ability to effectively communicate computer science ideas, information, and project results. This ability is measured by achieving a score of C or higher in the final course grade, indicating their proficiency in conveying their computer science work and findings.

Summary of Data

Number of Students Meeting Criterion:	13	Number of Students Not Meeting Criterion:	01
Total Number of Students Assessed:	12	Percent of Students Meeting Criterion:	%92

Interpretation of Results for Outcome 1:

Computer Science majors excel in programming design and implementation, particularly on advanced topics within the field of computer science. This achievement is a result of faculty dedicating additional time and effort to facilitate hands-on sessions with students, ensuring that they comprehend the material thoroughly, spanning from theoretical concepts to practical

application. Furthermore, students at this stage of the program are notably more motivated. This heightened motivation stems from both their increased self-assurance and proficiency in tackling more intricate problems, as well as their prior accomplishments within the program. In essence, this success is a testament to the effective learning and teaching processes within the Computer Science program

Student Learning Outcome 2:

students will emerge from their computer science education equipped with a comprehensive skill set that encompasses not only technical knowledge but also the ability to navigate the complex world of computer science, engineering solutions effectively, and contribute to the development of cutting-edge technology in both academic and professional contexts.

NMHU Traits Specifically Linked to Student Learning Outcome 2

- Critical and Reflective Thinking Skills
- Effective Use of Technology

1st Means of Assessment for Outcome 2:

In the context of CS 5710 artificial intelligence, assessing current knowledge of concepts and techniques and evaluating learning outcomes typically entails examining a student's comprehension of artificial intelligence principles. This evaluation extends to their proficiency in applying these principles to real-world challenges and their capability to analyze and interpret resulting data. Students are often tasked with completing a final project or research paper that involves a more profound exploration of a specific aspect of artificial intelligence or its applications. The assessment of their work hinges on criteria such as the quality of research conducted, the rigor of the methodology employed, and the significance of their findings. The assessment in this course is centered on students' ability to effectively communicate computer science ideas, information, and project results. This ability is measured by achieving a score of C or higher in the final course grade, indicating their proficiency in conveying their computer science work and findings.

Summary of Data

Number of Students Meeting Criterion:	15	Number of Students Not Meeting Criterion:	0
Total Number of Students Assessed:	15	Percent of Students Meeting Criterion:	%100

Interpretation of Results for Outcome 2:

Computer Science students demonstrate exceptional performance in the design and implementation of programming, particularly in advanced areas of the field. This accomplishment is attributed to faculty members who invest extra time and effort in conducting hands-on sessions, ensuring a comprehensive understanding of the material. This approach covers theoretical foundations and practical application. Moreover, students in this phase of the program exhibit heightened motivation. This drive is a result of their growing self-confidence, enhanced problem-solving skills for complex tasks, and past achievements in the program. Overall, this success underscores the effectiveness of the learning and teaching methodologies employed within the Computer Science program.

Assessment of Center Students:

(If your program is offered at one of the Centers, please contact OIER to have an analysis conducted for those students. If this does not apply to your program, you can delete this section.)

N/A

Assessment of Online Students:

(If your program is offered online, please contact OIER to have an analysis conducted for those students. If this does not apply to your program, you can delete this section.)

N/A

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.