



Program Assessment Report (PAR)

Applied Mathematics (AMTH) Masters Degree

REPORT PREPARED by: Huang, Chao Cheng

ACADEMIC YEAR COVERED BY THIS REPORT: 2021-2022

I. PROGRAM LEARNING OUTCOMES

Students should be able to have good understanding of basic concepts and methodologies in a broad range of advanced mathematics

II. PROCEDURES USED FOR ASSESSMENT

A. Direct Assessment

The assessment measure consists of evaluations of the program required courses and elective courses that include (but not limited to) the followings: 1. MTH 6810 - Methods in Applied Mathematics I 2. MTH 6820 - Methods in Applied Mathematics II 3. MTH 6050 - Mathematical Modeling 4. MTH 7310 - Real Analysis I 5. MTH 7320 - Real Analysis II 6. MTH 7160 Numerical Analysis I 7. MTH 7170 Numerical Analysis II 8. STT 6610 Theory of Statistics I 9. STT 6660 Statistical Methods I 10. STT 6620 Theory of Statistics II 11. STT 6670 Statistical Methods II 12. STT 7440 Applied Multivariate Analysis In addition, each student in Applied Mathematics should demonstrate the ability of solving complex technical problems. In consultation with the faculty members teaching these courses, the Department of Mathematics and Statistics Graduate Committee (DMSGC) will determine one or more appropriate problems from the final exam and analyze the solutions of a random sample of students from the class.

B. Scoring of Student Work

Course evaluation methods include homework assignments, midterm and final examinations, research projects (individual or group), student presentations in class, and any method deemed appropriate by instructors. Instructors are responsible for evaluating and scoring student performance. The final exam

question chosen to be analyzed by DMSGC will involve solving an interesting applied mathematics problem with certain significant challenges. Students will not be able to solve the problem without mastering the core materials of the course. The scoring will be based upon the following criteria: 1. Correctness: The solution should be technically correct using the methods studied in the course. 2. Clarity: The detailed work and steps in obtaining the solution should be clearly demonstrated. We will expect at least 80% success rate for the DMSGC evaluation based upon the above criteria

C. Indirect Assessment

Course evaluations and exit surveys for indirect assessment of the learning outcomes.

III. ASSESSMENT RESULTS/INFORMATION:

For 2021-2022, We evaluated MTH 6810 (Fall term) & MTH6820 (Spring term) and found the final exam problems are adequately designed for meeting the outcomes.

For 2021-2022, a total of seven students took the courses we evaluated. Three students scored A and four scored B. So the successful rate is 100%. In addition to the course evaluation, We also analyzed students' feedbacks and the exit interviews. The responses from students are mostly positive. We believe that our program is well-designed and successfully executed to achieve the learning outcomes.

[Analysis]

IV. ACTIONS TO IMPROVE STUDENT LEARNING

The results from this assessment will report to faculty for feedback. The applied mathematics committee will meet next year to discuss the appropriateness and execution of the learning outcomes.

V. SUPPORTING DOCUMENTS

Additional documentation, when provided, is stored in the internal Academic Program Assessment of Student Learning SharePoint site.