UNIVERSITY OF ENERGY AND NATURAL RESOURCES

DEPARTMENT OF MATHEMATICS & STATISTICS

MATH 305: NUMERICAL ANALYSIS AND COMPUTATION

LEVEL 300 EEE, REE, COMP ENG, PET ENG.

First Semester 2023/2024

ASSIGNMENT SET 2

Answer all questions Hand in time: **Before 12noon,07/03/2024**

1. Solve **Question 6(b) of Problem Set 3** by hand using;

   a) Jacobi Iteration method

   b) Gauss-Seidel method

   c) Successive Over Relaxation method with ($\omega = 1.1$).
   End at the third iteration for each of the methods, take $\mathbf{x}^0 = \mathbf{0}$.

2. Solve the above question using the matlab codes for;

   a) Jacobi Iteration method

   b) Gauss-Seidel method

3. a) Modify the SOR matlab code to compute the optimal ω value.

   b) Solve the question in 1 using the modified code.

NOTE: ***Refer to questions from pages 87 and codes from 88-89 of the handout .***

J. D. Ankamah **End of Assignment**