

CE 301
NUMERICAL METHODS IN ENGINEERING

Summer 2020-2021 – Section B

ASSIGNMENT #2 (Computer)

Due Date: 04.08.2021

Question:

Solve the equation below by Gauss—Seidel method until satisfying the tolerance limits:

- i.** $\varepsilon = 0.01$
- ii.** $\varepsilon = 0.001$
- iii.** $\varepsilon = 0.0001$

Start with an initial guess of **0.0, 0.0, and 0.0** for x , y , and z , respectively.

$$\begin{aligned}1.6x - 4.2y - 8z &= 22 \\2x - 9y + 2.4z &= 18 \\7.5x - 1.8y + 2.2z &= 15\end{aligned}$$

Note: You can make use of any software like MATLAB, Python, Excel etc.