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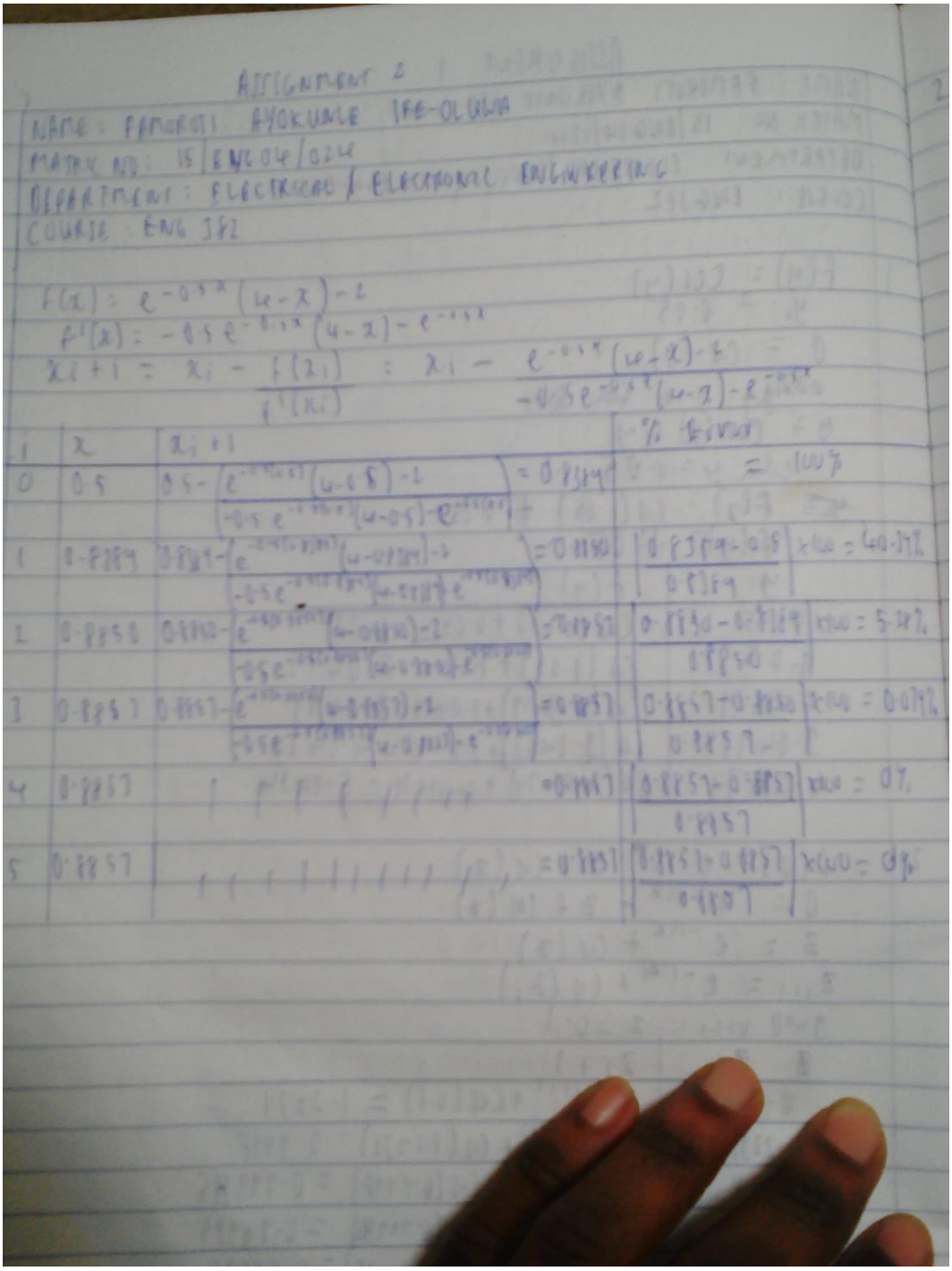
MATRIC NO: 15/ENG04/024

DEPARTMENT: ELECTRICAL/ELECTRONIC ENGINEERING

COURSE: ENG 382



2 $F_0 = \frac{0.3V^2}{500 + (\ln V)^3} - 0.02V$

$F_0 = mg$

$m = 3.5\,kg$

$g = 9.8\,m/s$

$F_0 = 9.8 \times 3.5$

$= 34.3\,N$

$34.3 = \frac{0.3V^2}{500 + (\ln V)^3} - 0.02V$

$0 = \frac{0.3V^2}{500 + (\ln V)^3} - 0.02V - 34.3$

Ask $f(V)$ to be [1]

$f(V) = \frac{0.3V^2}{500 + (\ln V)^3} - 0.02V - 34.3$

differentiate w.r.t V

$f'(V) = \frac{300V - \ln V^3 (0.6V) - 0.9V(\ln V)^2}{500^2 + \ln V^6} - 0.02$

$V_{i+1} = V_i - \frac{f(V)}{f'(V)}$

$\therefore V_{i+1} = V_i - \frac{\frac{0.3V^2}{500 + (\ln V)^3} - 0.02V - 34.3}{\frac{300V + \ln V^3 (0.6V) - 0.9V(\ln V)^2 - 0.02}{500^2 + \ln V^6}}$