SMQ3023 NUMERICAL METHODS (A242) [COURSEWORK ASSESSMENTS]

<table>
<tr><th colspan="2">QUIZZES
(20%)
MOOC Platform
[20 marks : 5 marks each]</th><th colspan="2">Assignment 1 (Individual)
(20%)
MOOC Platform
[40 Marks]</th><th colspan="2">Assignment 2 (Group)
(20%)
Article Writing
MOOC Platform
[40 marks]</th><th colspan="2">Final Assessment
(40%)</th></tr>
<tr><th>Title</th><th>Due Date</th><th>Title</th><th>Due Date</th><th>Topic</th><th>Due Date</th><th>Topic</th><th>Due Date</th></tr>
<tr><td>Quiz 1</td><td>Before Week 3</td><td>Activity 1</td><td>28 Mac 2025 - Week 2</td><td>1. Nonlinear System</td><td rowspan="5">8 June 2025
Week 12
(end of the week)</td><td>1. Nonlinear System</td><td rowspan="5">Week 15 or Week 16 (depends on the timetable)</td></tr>
<tr><td>Quiz 2</td><td>Before Week 6</td><td>Activity 2</td><td>6 April 2025- Week 3</td><td>2. Interpolating Polynomial</td><td>2. Interpolating Polynomial</td></tr>
<tr><td>Quiz 3</td><td>Before Week 9</td><td>Activity 3</td><td>20 April 2025 – Week 5</td><td>3. Numerical Differentiation</td><td>3. Numerical Differentiation</td></tr>
<tr><td>Quiz 4</td><td>Before Week 12</td><td>Activity 4</td><td>4 Mei 2025 – Week 7</td><td>4. Numerical Integration</td><td>4. Numerical Integration</td></tr>
<tr><td colspan="2" rowspan="2"></td><td>Activity 5</td><td>25 Mei 2025 – Week 10</td><td>5. Linear System</td><td>5.Linear System</td></tr>
<tr><td colspan="2">CLO1: Solve nonlinear, system of differential equations, interpolating polynomial, numerical differentiation and numerical integration by using suitable numerical methods.</td><td colspan="2">CLO3: Apply appropriate numerical techniques to solve mathematics problems.</td><td colspan="2">CLO4: Work in teams to complete the assigned task</td><td colspan="2">CLO2: Compare the numerical errors obtained for nonlinear equations, system of linear equations, interpolating polynomial, numerical differentiation and numerical integration using programming.</td></tr>
<tr><td colspan="2">Instructions:
1. This is individual Quiz.
2. Everyone must answer this quiz in MOOC platform.
3. Please follow the given dateline.
4. Each quiz is worth 5%</td><td colspan="2">Instructions:
1. This is individual submission but you may work in pair.
2. Everyone need to submit this at the MOOC platform
3. Please make sure you have front cover, name and the name of the Activity.
4. Please follow the given dateline.
5. Submit full working. Provide Scilab Coding when necessary.</td><td colspan="2">Instructions:
1. Work in a group of THREE (3) members.
2. Choose any ONE (1) Topic listed above. Investigate the performance of some numerical methods in solving the problem.
3. Use the given template https://shorturl.at/3Y1oa
4. You need to consider the followings:
a) The equation to solve
Example: polynomial equation, nonlinear system, differentiation, integration etc. Choose only one type of problem based on the TOPIC.
b) Numerical Methods
Example: Comparison between Lagrange, NDD and Vandermonde.
c) The problem
Example: Population problem, velocity, area of building, etc
d) The solution:
Example: The most efficient method.</td><td colspan="2">Will be given in Week 16/17</td></tr>
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