Simulator Requirement Specification

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| Department Name | Civil Engineering |
| Class | S Y Btech |
| Semester | 1 |
| Subject Name | Engineering Hydraulics |
| Experiment No. | 1 |
| Experiment Name | To determine the metacentric height of ship model. |

Version History

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| Sr. No. | Version Number | Created By | Approved By | Date |
| 1 | v1.0 | Haripriya Desai | Prof. A. K. Khebudkar & Prof. M. M. Mujumdar | 10/02/2021 |
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Detailed Requirement Specification

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| **Req. ID** | **Visual Entity Required** | **Requirement Description** | **Comments** |
| 1. | Floating body or ship model and a tank which contains water.  https://images.app.goo.gl/oh8s3PNqnynyRcUY8 | 1. Fill the tank with water and place the ship in the tank, exactly in middle so that none of its side is in contact with the tank. 2. Take weight of 5kg ,10kg,etc as per requirement. And place it on the plate at any one side of the scale and by considering a particular distance from the centre of the scale and measure the angle as  **Θ(theta) .** 3. **Repeat this same process on both sides of scale with same weight and different distance for different set of readings. And note down the readings.** 4. Find the metacentric height with the given formulae.   The Metacentric height (GM) is given by GM = (w \* x) / (W \* tan θ)  where,  W = weight of the floating body + movable weight  w = movable weight  x = distance through which the movable load is shifted  θ = Angle of Heel | 1. The tank must be shown as we are pouring water in it. And show the placement of ship till it becomes still. 2. Show weight upto 20kg and plate which is hanged on the scale, on which the weights are placed. 3. The distance must be asked to the person doing the practical and even the weight to be placed. 4. A thread hanged at the centre along with the knob is used to measure the angle deflected due to tilting when loads are placed. 5. Display the value of angle. 6. Then show the values in table form (the table is given in the experiment) 7. Then display the calculated value as it’s the metacentric height of the ship. 8. Then finally calculate the average metacentric height for GM1 i.e left side and GM2 i.e right side of the scale value |
|  | https://images.app.goo.gl/zQjnvA5czq4LC5b3A |  |  |
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|  | https://images.app.goo.gl/K3ezLPg2jxZbKbiB9 |  |  |
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