RAPID MIX CONTACT CHAMBER TEAM- FALL 2016

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SETUP THE APPARATUS

FIND THE VARIABLES TO TEST

FLOW RATE –SIZE OF CONTACT CHAMBER RELATIONSHIP (TO CREATE A SCALABLE DESIGN ALGORITHM)

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VARY PARAMETERS AND BUILD MODELS
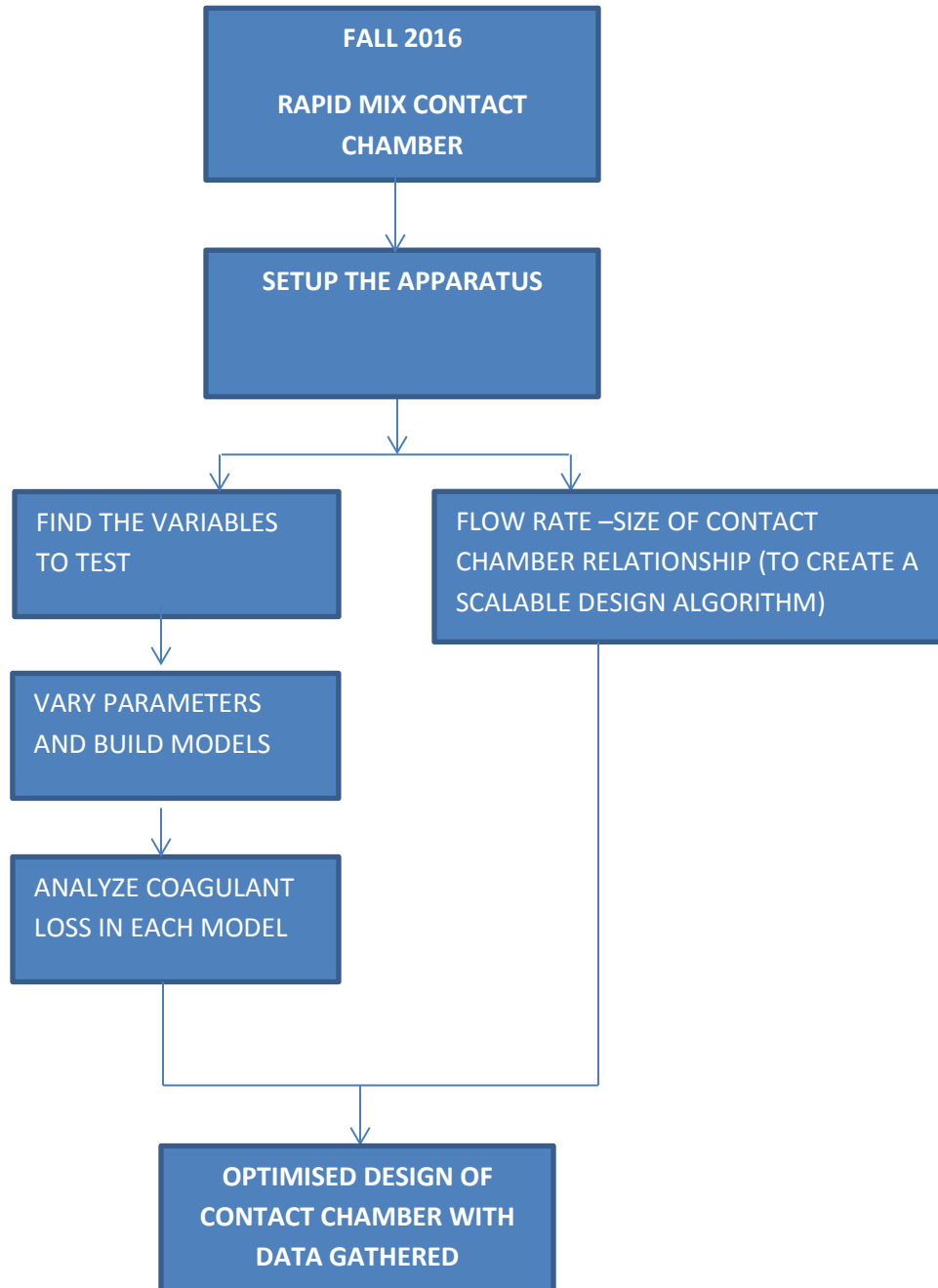
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ANALYZE COAGULANT LOSS IN EACH MODEL

OPTIMISED DESIGN OF CONTACT CHAMBER WITH DATA GATHERED

Team Members: Joao Carlos Moraes, Javier Escanciano, Mythri Krishnamoorthysujatha
Team Coordinator: Jillian Whiting

Set up Apparatus: (9/14/16) Joao Carlos Moraes: Rebuild previous semester's apparatus. However, take into account the parameters we plan to test and tweak the design accordingly. We will use the data from the previous design available as a MathCAD file on the Google Drive.

Flow rate – Size of contact chamber relationship (to create a scalable design algorithm): (Joao Carlos Moraes) : Design the simplest relationship for the flow rate and the size of the contact chamber which can be used to optimize the process that will take place in the rapid mix later. Come up with a formula that will optimize the relationship while allowing the variables to be scaled.

Find the variables to test : Mythri Krishnamoorthysujatha : Brainstorm and research different parameters that can be altered, such as shape and slope.

Vary Parameters and Build Models: Mythri Krishnamoorthysujatha : With each parameter in mind, make adjustments to the apparatus in order to relate each variable to coagulant loss. Some of these adjustments can be as simple as moving the apparatus, or as detailed as building a new chamber.

Analyze Coagulant Loss in Each Model: , Javier Escanciano : Run tests with the different models and collect data on coagulant loss using the tube settler method.

Optimize Design of Contact Chamber with Data Gathered: , Javier Escanciano : Find the best option to prevent coagulant loss with the different parameters tested. Then try to see if these values are scalable and how they scale.