

PRELAB EXERCISE 4: EXTERNAL CONVECTION

ME 436 Heat Transfer

Introduction

The primary objective of this experiment is to...

This pre-lab assignment will act as a guide towards creating a mathematical model before attending lab – saving critical in-class time for performing experiments and analyzing data.

Prerequisites

Before attempting this pre-lab assignment, it is imperative that you:

- Review *textbook sections 6.3, 7.1 & 7.4*, including *Example 7.4*,
- Review *experiment procedures*, and
- Watch the *pre-lab videos* on Blackboard (Bb).

Getting Started

First, be sure to download the starter code from Blackboard (Bb), and *extract* (unzip) its contents to the directory in which you wish to complete the exercise¹. Before attempting, make sure that you have completed all of the *prerequisites* below.

Files included in this exercise:

Once you have unzipped the contents of the starter package, you should see the following files:

- `ex4.m`
- `/lib`

¹Note: When using the Heat Transfer Lab computers, you must extract your code to the local hard drive: `C:/temp/`, NOT to the server (ie., Desktop, Group Folder, &, etc.)

```
[*] hilpert.m  
[*] zukauskas.m  
[*] churchill_bernstein.m  
[*] calc_uncertainty.m
```

★ indicates files that you will need to complete.

0. Environment Setup

Before we can get started, we need to setup our MATLAB environment properly. As always, if using the laboratory computers, be sure to be running your code from the C:\temp directory, and also make sure you have unzipped your code properly. Otherwise you may receive './lib not found' errors.