ME3001 - 002 - Spring 2020 - Exam 2 Review

- **General Information**

  - **Date:** Friday 04/24/2020

  - <u>Start Time</u>: 12:20 AM   <u>Stop Time</u>: 2:20 PM

  - **Location:** The exam will be taken remotely.

  - **Access the exam at Start Time on ilearn.**

  - **Submit your work as a .pdf before Stop Time on ilearn.**

  - **Label all answers. <u>Do not</u> write the problem statements.**

- **Materials Allowed in Exam**

  - **Calculator of your Choice**

  - **One 8.5inx11in Two-Sided Equation Sheet**

  - **Reference Sheet(s) from Instructor**

  - **A writing device of your choice, pencil or tablet**

  - **You are not allowed to use external resources such as the internet or communicate with anyone besides the instructor during test**

  - **This is a Self Proctored Exam - You are responsible for upholding the TNTECH Student Academic Misconduct Policy. You must write, sign and date the following honesty contract on the first page of your exam.**

- Honesty Contract:

  I _____, agree to follow the policy of this exam as described in the document *me3001_exam2_honestycontract.pdf.*

  Signature_____   Date_____

- **Major Topics**

  - **The Laplace Transform Method**

  - **State Space Model Representation**

  - **2DOF Dynamic Models**

- **Probable Problem Breakdown**

  1. **Technical Problem A (33.33%)**

     - No Model - Just Math
     - Solve ODE 1st 2nd
     - Laplace Transform Method

     - The Trial Solution Method is not covered on this exam

  2. **Technical Problem B (33.33%)**

     - System Modeling
     - Mass Spring Damper 2DOF

     - not a rotation problem

  3. **Technical Problem C (33.33%)**

     - State Space Model Representation

     - Given a an EOM(s) show the S.S. matrix equation

     - Given the desired outputs show the output matrix equation