DEPARTMENT OF MECHANICAL ENGINEERING

Prof. J. L. Stein ME360

<name = schedule.ps, pdf> MODELING ANALYSIS AND CONTROL OF DYNAMIC SYSTEMS

Reading Assignments - Tentative 9/3/02 PART 1: Modeling: Given an engineering objective (e.g. design a suspension system) determine the modeling objective, and develop a proper mathematical model.

Fall 2002

DATE TOPIC READING ASSIGNMENT Week #1 Introduction to ME360: Class Mechanics: What is Systems Engineering? What is (Dynamic) Systems Engineering: Modeling? Analysis? & Control? The Art and Science of Abstraction. Proper Models. Automated Modeling. Notes Notes Fundamental Concepts and Terminology: Systems, Environments and Boundaries. 2.1 Chapter 1 Energy Conservation & Power Continuity Energy and Power Variables: Mechanical, Fluid and Electrical Domains Bond Graph Notation 2.2 Week #2 Generalized Elements: Sources, Sinks and Resistances Constitutive Laws Notes Week #3 Ideal Machines: Generalized Tranformation 2.4 Transformers and Gyrators 2.4 Systems: Generalized Elements: Sources, Sinks and Resistances Chapter 3 Week #3 Ideal Machines: Generalized Energy Transformation: Junction Structures 0 - & -1 3.3 Week #5 Causality Dynamic Systems: Ideal Source Load Machines 2.4 Systems: Ideal Source Internation: Junction Structures 0 - & -1 3.3 Week #5 Causality Differential Equation Formulation 3.4 Solutions to first order differential equations 3.5 Week #6 Solutions to first order differential equations 4.1 Week #7 Numer	the modeling objective, and develop a proper mathematical model.			
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