بسم الله الرحمن الرحيم

Palestine Polytechnic University

Faculty of Applied Sciences

Department of Applied Mathematics

Linear system of first-order differential equations

Prepared by:

Malak Hasen-Musa

Muna Jaafreh

Supervisor :

Ali Qudaimat

Submitted in Partial fulfillment of the requirements for the degree of B.Sc. in Applied Mathematics at Palestine Polytechnic University.

Hebron , January 2014

Abstract

In this seminar we will give a general solution of n-dimensional first-order system of ordinary differential equations. Such a system arises naturally in problems involving several dependent variables each of which is a function of a single independent variable. We will denote the independent variable by t, and x_1, x_2, …, x_n represent dependent variables which are functions of t.

The chapter one we will represent some of important definitions and theorems that we will need them in our subject.

Then in chapter two, we will study the methods for contracting the general solution of homogeneous and non-homogeneous linear first-order system differential equations.