

A decorative graphic on the left side of the page, consisting of a network of blue lines and circles. The lines are of varying thickness and connect to circles of different sizes, creating a circuit-like or orbital pattern that extends from the top to the bottom of the page.

SPACE ENGINEERING 3  
Assignment 1  
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**ORBIT SIMULATION AND  
DETERMINATION**

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**STUDENT PLAGIARISM: COURSE WORK - POLICY AND PROCEDURE  
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- (3) this Work is substantially my/our own, and to the extent that any part of this Work is not my/our own I/we have indicated that it is not my/our own by Acknowledging the Source of that part or those parts of the Work.

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**Date: 24/3/16**

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## 1. INTRODUCTION

Each mainQN.m file has a section called 'User Input' where the animations and state plots can be turned on/off. Also the timestep and the number of days to simulate are defined. The default settings are  $dt = 100$  seconds and  $days = 1$ .

hello

## 2. GLONASS ORBITAL DETERMINATION

The Russian GNSS is called GLONASS, a system that requires 24 satellites in three orbital planes to have full global coverage. The satellites are in nearly circular orbits at an average altitude of 19130 km, approximate period of 11 hrs and 15 min and inclined at  $65^\circ$ .