

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

SPACE ENGINEERING 3
Assignment 2
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**GLOBAL NAVIGATION
SATELLITE SYSTEMS**

Lydia Drabsch
311217591
ldra3557@uni.sydney.edu.au



**STUDENT PLAGIARISM: COURSE WORK - POLICY AND PROCEDURE
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Name(s): Lydia Drabsch

Signature(s):
Lydia Drabsch

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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 $days = 1$.

2. QUESTION 1

$$H_k = 2 \quad (1)$$

3. QUESTION 2

4. INTRODUCTION

The final GEO orbit is defined as having a period of one sidereal day, 23 hours 56 minutes 4.0916 seconds. The satellite parameters in the park orbit are

4.1 Final orbital requirements

4.2 Methodology

The Hessian of the Lagrangian $H_{\mathcal{L}} = \nabla_{xx}^2 \mathcal{L}$
BFGS method. Approximation of the Hessian update

$$H_{k+1} = H_k - \frac{H_k s_k s_k^T H_k}{s_k^T H_k s_k} + \frac{y_k y_k^T}{y_k^T s_k} \quad (2)$$

$$s_k = x_{k+1} - x_k \quad (3)$$

$$y_k = \nabla f_{k+1} - \nabla f_k \quad (4)$$

Table 4.1: text

Orbital Parameter	Initial Value	Final Value
Semi-major axis	6655937 m	
Period		86164.0916 s
Velocity		
Eccentricity	0	0
Inclination angle	-28.5°	0°
RAAN	0°	
Argument of Perigee	0°	
Mean Anomaly	0°	free
Epoch	0 s	free

5. APPENDIX A: QUESTION 1

6. APPENDIX B: QUESTION 2