3F1 Laboratory Worksheet

2. Simplified aircraft model. Transfer function =

num = den =

Controller transfer function =

k= D=

Phase margin =

Amount of extra time delay which can be tolerated =

2.1. PIO. Period of oscillation (observed) =

Period of oscillation (theoretical) =

2.2. Sinusoidal disturbances.

Maximum stabilising gain =

Gain at 0.66 Hz = Phase at 0.66 Hz =

Open loop T.F. (y → d) = Closed loop T.F. (y → d) =

2.3. Fastest pole. T =

3. Autopilot. Proportional gain Kc =

Period of oscillation Tc =

3.1 Transfer function of PID controller =

PID constants: Kp = Ti = Td =

Final value of Td =