

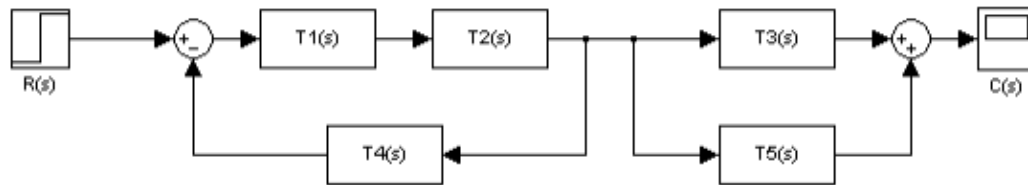
# Trabajo Practico N°2.

## *Teoría de Control*

### *Integrantes:*

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Ejercicio 1)



$$C = T1 T2 T3 U + T1 T2 T5 U$$

$$U = R - T1 T2 T4 U$$

$$U + T1 T2 T4 U = R$$

$$U (1 + T1 T2 T4) = R$$

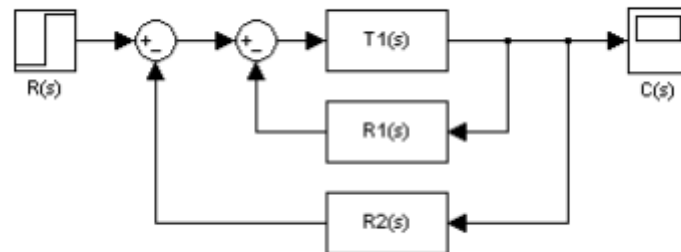
$$U = \frac{R}{1 + T1 T2 T4}$$

$$C = T1 T2 T3 \left( \frac{R}{1 + T1 T2 T4} \right) + T1 T2 T5 \left( \frac{R}{1 + T1 T2 T4} \right)$$

$$C = \frac{T1 T2 R}{1 + T1 T2 T4} (T3 + T5)$$

$$\frac{C}{R} = \frac{T1 T2}{1 + T1 T2 T4} (T3 + T5)$$

Ejercicio 3)



$$C = T1 X$$

$$X = U - R1 T1 X$$

$$X + R1 T1 X = U$$

$$U = R - R2 T1 X$$

$$X + R1 T1 X = R - R2 T1 X$$

$$X ( 1 + R1 T1 + R2 T1 ) = R$$

$$X = \frac{R}{( 1 + R1 T1 + R2 T1 )}$$

$$C = \frac{T1 R}{( 1 + R1 T1 + R2 T1 )}$$

$$\frac{C}{R} = \frac{T1}{( 1 + R1 T1 + R2 T1 )}$$