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**COLLEGE OF ENGINEERING  
ENGINEERING MATHEMATICS I (ENG 281) ASSIGNMENT II**

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**PROBLEM STATEMENT**

The parametric equations of a curve are as given in Equations (1) and (2):

$$x = \cos t + t \sin t \quad (1)$$

$$y = \sin t - t \cos t \quad (2)$$

In terms of  $t$ , determine:

- (i) an expression for the radius of curvature ( $R$ ), and
- (ii) expressions for the coordinates ( $h, k$ ) of the centre of curvature.