

## I.1 Polynomial interpolation

Given a set of  $n+1$  distinct nodes,  
 $x_0 < x_1 < \dots < x_n$ , and corresponding data points  
 $y_0, y_1, \dots, y_n$ , find the  $n$ -th degree polynomial

$$P_n(x) = c_0 + c_1 \cdot x + c_2 \cdot x^2 + \dots + c_n \cdot x^n$$

that satisfies the  $n+1$  interpolation conditions (ICs)

$$P_n(x_j) = y_j \quad \text{for } j = 0, 1, \dots, n.$$

The  $n+1$  coefficients  $c_0, c_1, \dots, c_n$  of the so-called interpolating polynomial (IP)  $P_n(x)$  result from the  $n+1$  ICs (no linear system of equations (LSEs)).

