Gaussian Filtering:

A Gaussian function centered at the origin has the form:

$$G(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-x^2/2\sigma^2} \tag{1}$$

Typically, σ is selected so that only pixels inside the sampling region (i.e., the 5×5 filter) have a significant contribution, so a discrete 1D filter over inputs $P(x-2)$, $P(x-1)$, $P(x)$, $P(x+1)$, and $P(x+2)$ approximates the filtered result $F(x)$ by:

$$F(x) = \frac{1}{\gamma} \sum_{i=x-2}^{x+2} P(i)\, e^{-(i-x)^2/2\sigma^2} \tag{2}$$

Here γ is the discrete normalization factor equivalent to summing the weights of the 5 pixels contributing to the Gaussian:

$$\gamma = \sum_{i=x-2}^{x+2} e^{-(i-x)^2/2\sigma^2} \tag{3}$$

Since the Gaussian is a separable filter, it may be first applied in x, then independently in y. In other words, the first pass would compute a temporary value $T(x, y)$ using a 1D filter over the pixels $P(x-2, y)$, $P(x-1, y)$, $P(x, y)$, $P(x+1, y)$, and $P(x+2, y)$. Then the second pass would compute the final filtered result $F(x, y)$ using a 1D filter over the pixels $T(x, y-2)$, $T(x, y-1)$, $T(x, y)$, $T(x, y+1)$, and $T(x, y+2)$.

σ values less than 1.5 would be appropriate for a 5×5 filter. I would suggest using $\sigma = 1$. Note that changing σ affects the blur in the final image.