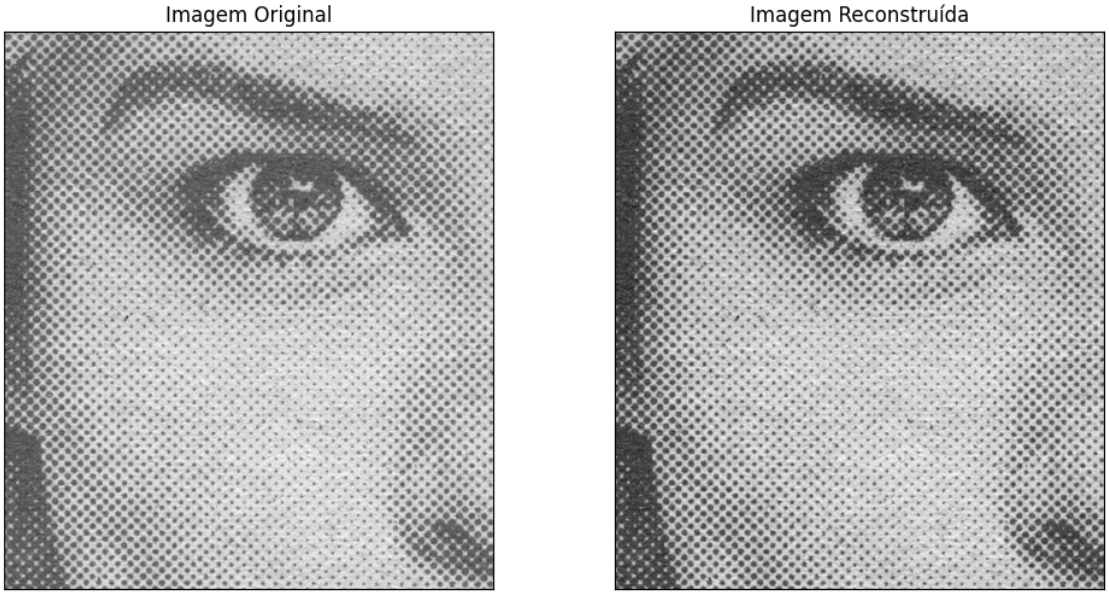

```
<Figure size 640x480 with 0 Axes>
```




```
<Figure size 640x480 with 0 Axes>
```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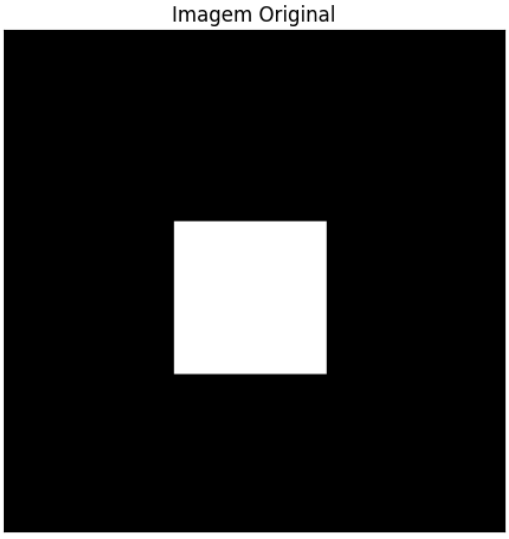
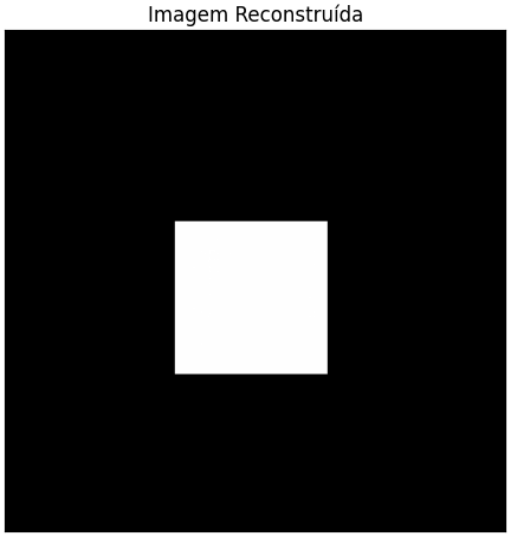
<Figure size 640x480 with 0 Axes>
```



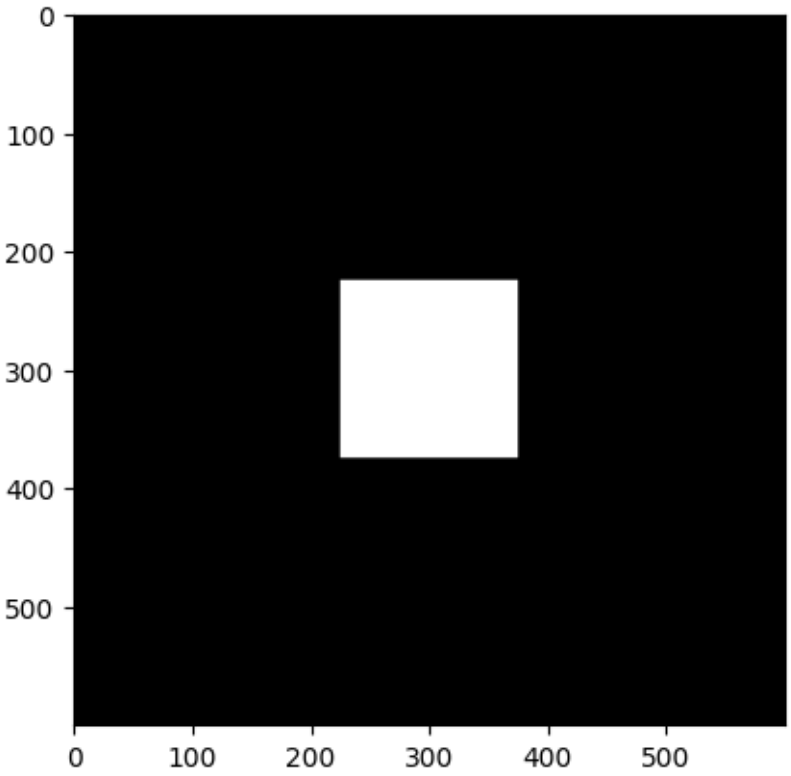


O código a seguir aplica a Transformada de Fourier Discreta (DFT) e a Transformada Inversa de Fourier em uma imagem com fundo preto e quadrado branco no centro representando a função sinc(x,y) e exibe os resultados plotando as imagens.

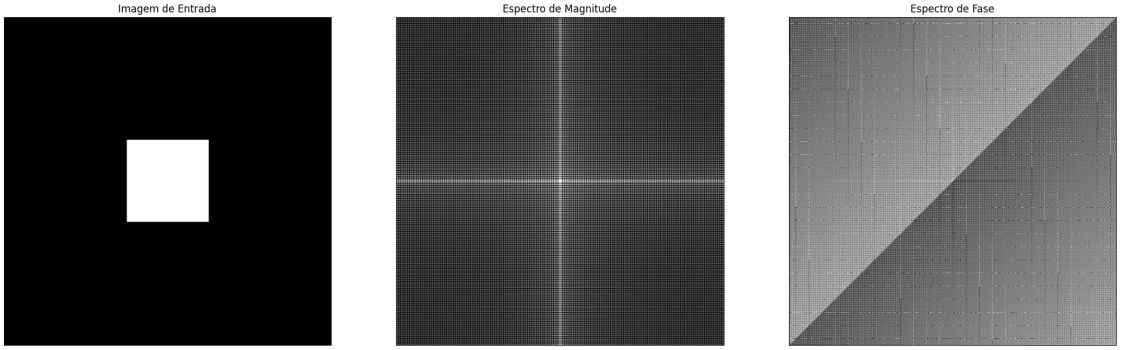
[156]:
```
img_white_square = np.zeros((600, 600, 3), dtype=np.uint8)
img_white_square[225:375, 225:375] = (255, 255, 255)
# mostrar imagem
plt.imshow(img_white_square)
plt.show()

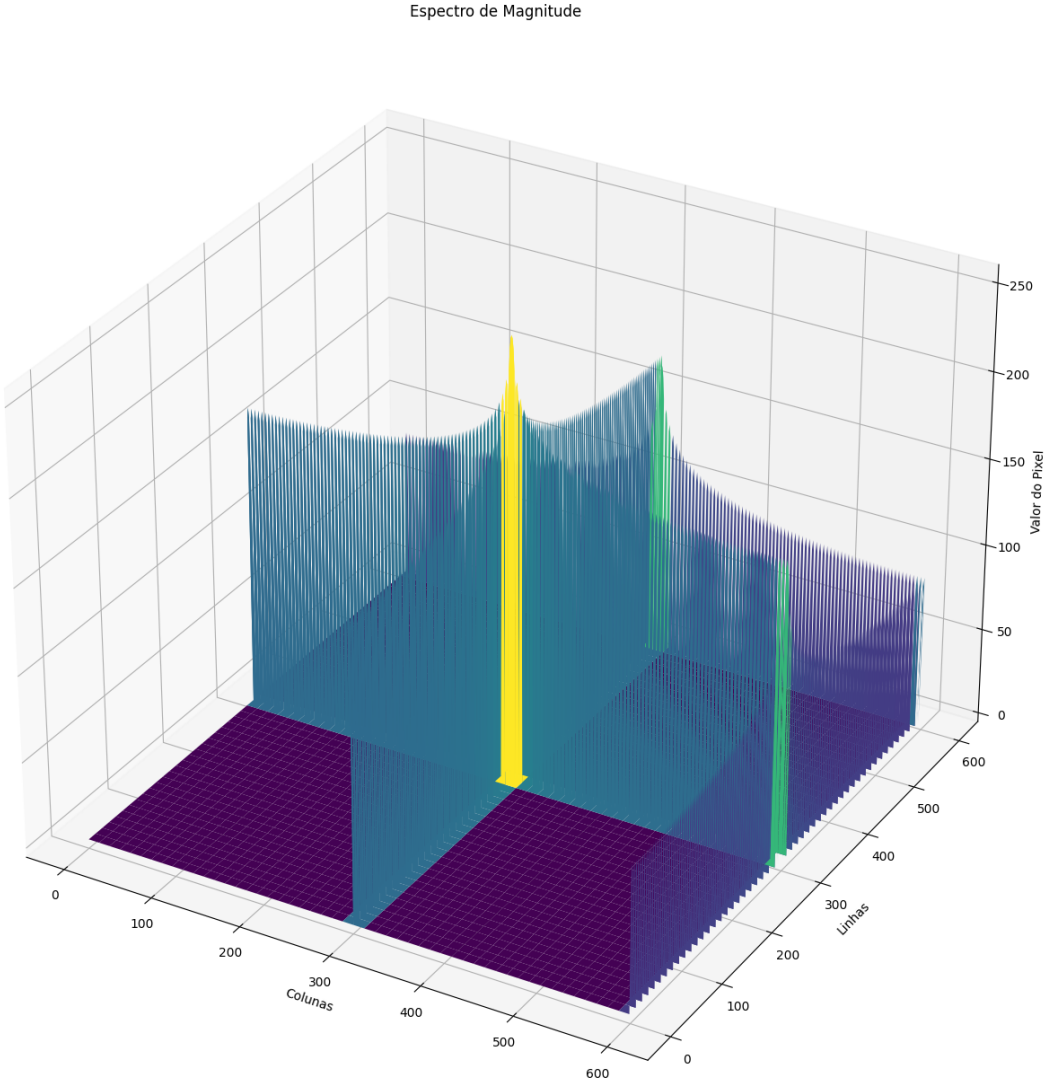
# aplicar a transformada de Fourier
magnitude_spectrum, phase_spectrum, dft_shift =␣
 ↪apply_fourier_transform(img_white_square, display=True)

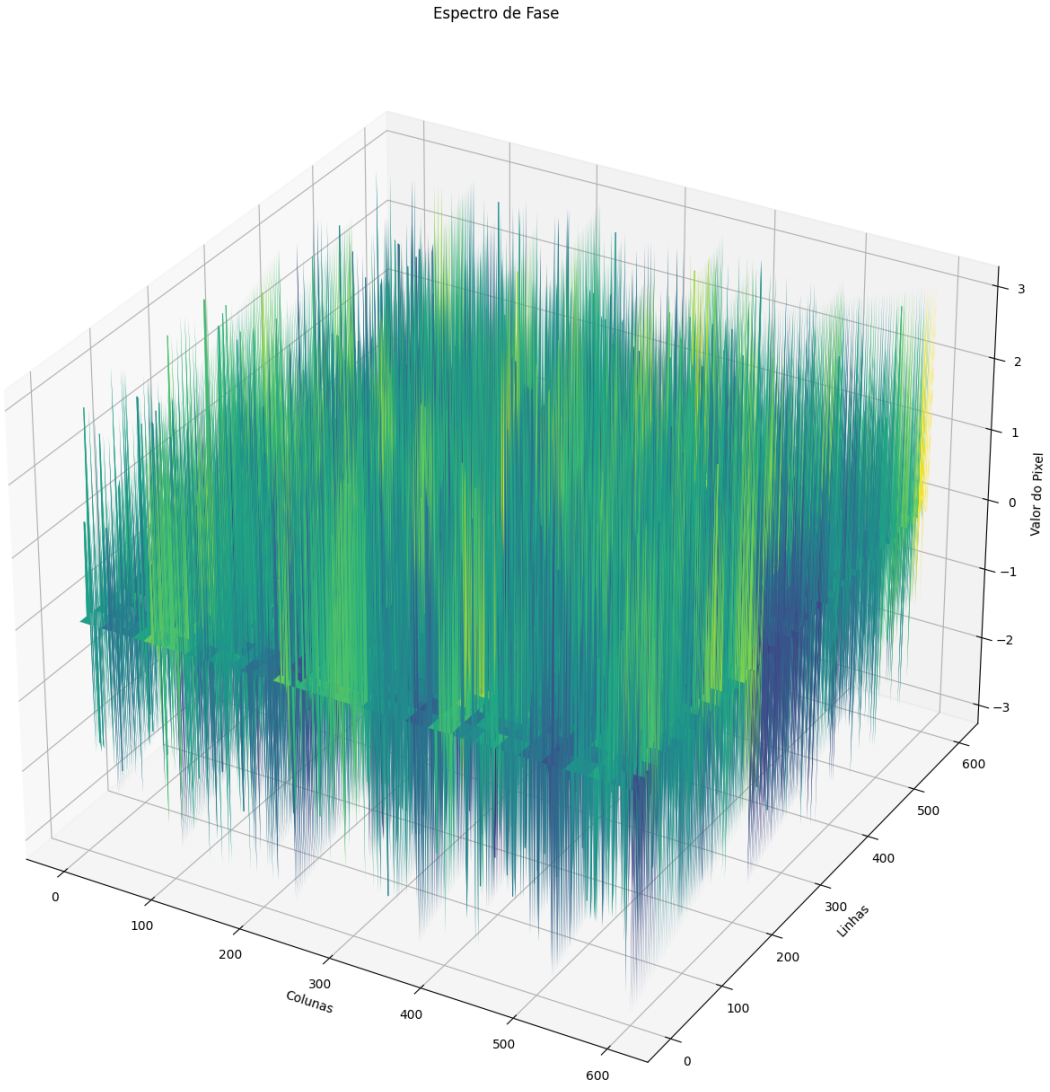
# aplicar a transformada inversa de Fourier
inverse_fourier_img = apply_inverse_fourier_transform(img_white_square,␣
 ↪dft_shift)
```



<Figure size 640x480 with 0 Axes>







[ ]:
```
#%cd /content/drive/MyDrive/Colab Notebooks/aula7
#! sudo apt update
#! sudo apt-get install texlive-full
! jupyter nbconvert --to pdf TransformadaDeFourier.ipynb
```