```
import numpy as np
import matplotlib.pyplot as plt

# Constants
amplitude_x = np.pi/3.0
amplitude_y = np.pi/3.0
frequency_x = np.pi/100
frequency_y = np.pi/100
phase_diff_x = 0.0
phase_diff_y = 3*np.pi/3.0
num_iterations = 10
initial_phase = 0
angle_data = np.zeros((1000, 10))

# Function to generate a sine wave
def generate_sine_wave(amplitude, frequency, phase_difference):
    return amplitude * np.sin(frequency + phase_difference)

# Iterating to calculate joint angles over time
for time_step in range(1000):
    for joint_index in range(10):
        if joint_index % 2 == 0:
            theta_1 = generate_sine_wave(amplitude_x, frequency_x * time_step,
joint_index * phase_diff_x)
            angle_data[time_step, joint_index] = theta_1
        else:
            theta_2 = generate_sine_wave(amplitude_y, frequency_y * time_step,
joint_index * phase_diff_y + initial_phase)
            angle_data[time_step, joint_index] = theta_2

# Plotting joint angles over time
for joint_index in range(10):
    label = f'angle_{joint_index}'
    plt.plot(angle_data[:, joint_index], label=label)

plt.xlabel('Time')
plt.ylabel('Angle')
plt.legend()
plt.title('Change in Joint Angle Over Time')
plt.show()
```