In [35]:
```
import numpy as np
import matplotlib as mpl
import matplotlib.pyplot as plt
import seaborn as sns


def get_n_coin_tosses ( n = 1 ):

    return np.random.randint (2, size = n)
```

In [36]:
```
print(get_n_coin_tosses(10))
```

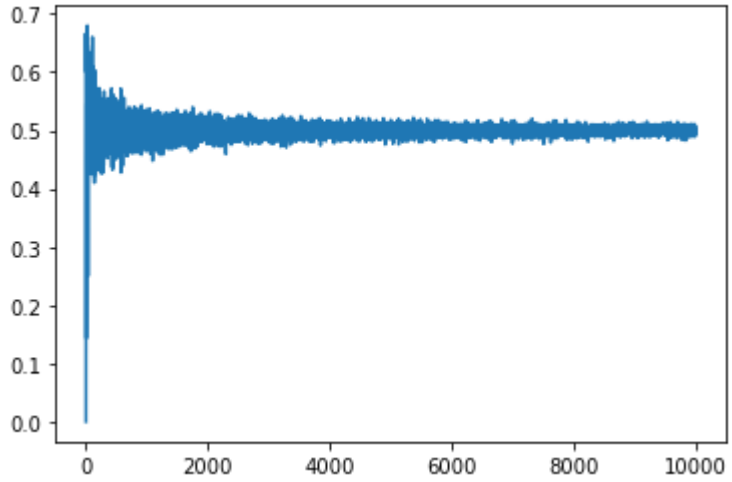
```
[1 0 0 1 1 0 0 1 1 1]
```

In [37]:
```
def fraction_heads (N):
    x=get_n_coin_tosses (N)
    a=sum(x)
    return a/N
```

In [38]:
```
def simulation (m):
    x=np.arange(1,m+1)
    y=[]
    for i in x:
        y.append(fraction_heads(i))
    return x,y
```

In [40]:
```
x,y=simulation(10000)
plt.plot(x,y)
```

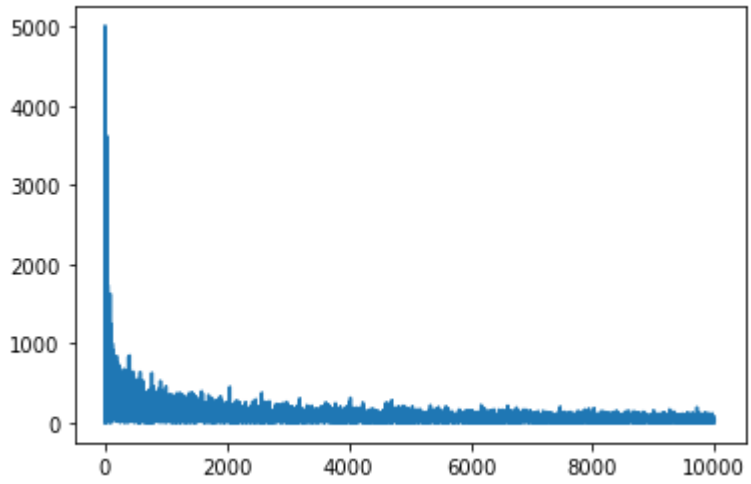
Out[40]:
```
[<matplotlib.lines.Line2D at 0x2c1d64d0d30>]
```



In [48]:
```
def get_Ne (N):
    x,y= simulation(N)
    Ne=[]
    for i in y:
        c= N * abs(i-1/2)
        Ne.append(c)
    return plt.plot(x, Ne)
```

In [50]:
```
print(get_Ne(10000))
```

```
[<matplotlib.lines.Line2D object at 0x000002C1D6819730>]
```



In [ ]:
```

```