1.1 Background of Study

Sediment is the nonpoint source pollutants come from a number of sources and washed into our waterways by surface runoff. When land disturbing activities occur, soil particles are transported by surface water movement. Soil particles transported by water are often deposited in streams, lakes, and wetlands. Land disturbing activities such as road construction and maintenance, timber harvesting, mining, agriculture, residential and commercial development, all contribute to this problem.

In general, sediment comprises many shapes and sizes. The sediment size can be small, such as sand, small pebbles and silt, or large such as boulders, which are normally found upriver. Sediments found in estuaries are mostly fine-grained, such as sand and silt. The speed at which water flows in rivers plays an important part in determining its capacity to carry away sediments. Slower moving rivers will have a lower rate of sediment movement. The process of sediment deposition is also dependent on river discharge and speed of river flow. As such, a higher discharge values and water velocity would result in higher amounts of sediment. In addition, time is a factor whereby the longer the sediment deposition process, the higher the sediment loads.
The river is one of the most important sources of water for all living things in addition to lakes, seas, water catchments and underground water. Rivers are very important to humans and other organisms as they are essential resources for living. A number of processes influence the sedimentary content and quality of river water. These include erosion, transport and deposition. These processes mutually interact along the river, from the ridges up to the mouth of the river. One of the characteristics of a river is its unidirectional flow. The river will exhibit different water levels, rates of flow and rates of erosion during different seasons such as during monsoons and droughts. This situation is influenced by the frequency and intensity of rainfall in the area.

Soils that contain minerals in large quantities produce strong chemical bonds in the soil and are highly stable soils on which cover crops or vegetation grow and where soil conservation such as mulching and contour terraces are practiced, also help prevent erosion as they reduce run-offs and provide a damping effect to the kinetic energy of rainfall on soil surfaces. Nevertheless, any increase in velocity and volume of surface run-offs will also increase the rate of erosion as increasingly large quantities of soil will be swept down the slopes. This increases the amount of suspended sediments and water turbidity in stream channels, thus reducing the water quality.

River quality is assured when it is sufficiently maintained. However, river quality may be adversely affected by sudden severe flooding or drought. Therefore the characteristics of the river discharge are important in terms of its geomorphology, hydraulics, flood control, navigation, stabilization or development, depending on the purpose of the water resource for aquatic organisms, domestic use, et cetera.

1.2 Problem Statement

Rivers bring along sediment and silt on their way to sea and deposit it along their banks. The sediment carried by river is high especially when the heavy rainfall
occurred. Heavy rainfall will lead to surface runoff and erosion to happen. This would result to high amount of sediment concentration in river as the eroded soil goes in the river. Other than that, grain size of sediment and flow rate will affect sediment discharge in river.

In sediment transportation, high flow rate can carry much sediment and smaller size of sediment can be carried with ease along the river. Over a period of time, the high amount of sediment will settle down and the accumulated sediment will eat up the river bed thus causing the river to overflow or flooding. Thus, knowledge of the quantity, quality and dynamics of sediments is essential for managing our water resources systems and to against negative effects from happen.

1.3 Objective

(i) To determine sediment concentration in the Galing River
(ii) To determine range of sediment grain size in the Galing River
(iii) To determine sediment discharge at Galing River
(iv) To determine the factors influencing sediment transport at Galing River

1.4 Scope Of Study

(i) The research will be conducted along Galing River
(ii) Analyze sediment sample base on Udden-Wentworth scale as to get the grain size
(iii) Analyze sediment sample base on Engelund Hansen’s sediment transport function as to get sediment discharge