END3032 – SYSTEMS SIMULATION

THE SOCAL CASTING PROBLEM

Laboratory Practice #5

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The SoCal Casting Problem

In the SoCal Casting machine shop, castings arrive in the batches of **4** per hour. From the receiving dock they are sent to the mill and the milling operation time is **normally** distributed with a mean of **3 minutes** and a standard deviation of **1 minute**. The milled castings are sent to the grinder, where they are ground for **uniformly (5, 1) minutes**, in other words minimum four and maximum six minutes. After grinder, they are sent to the inspection station and the inspection takes minimum **4**, mode of **5**, and maximum of **6 minutes** according to a **triangular distribution**. After inspection, **30 percent** of the castings are sent back to the **mill for rework**, **10 percent** are sent back to the **grinder for rework**, and **5 percent** are scrapped. The remaining, **55 percent**, pass the inspection and go on to the finished parts store. Consider a material handling time of **1 minute** between each process and the process times for rework are the same as their standard process times.

Make a simulation model and determine the number of parts reworked at mill and grinder. Also, calculate the number of scrapped and produced parts, likewise the work-in-process (WIP).

Run the simulation model for 100 hours.