This paper presents the second phase of development of Computer-Based Simulation Laboratory (CBSL) for e-Learning especially for non-electrical engineering background. There were 14 lab sheets used in this study. Each lab sheet was divided into different components in order to help the students get used to the process of thinking properly. The steps of developing CBSL were as follows: 1) taking the students’ opinions on CBSL (first phase) into account such as the correctness, and the completeness of the contents for making corrections on CBSL 2) design the computer program, and 3) get validated by 6 experts. The results of the study were that most of the experts were satisfied with CBSL at the good level particularity on the picture/image.