Experimental investigation was carried out to study the effect of a hollow andinclination angles on the ability of a square flat plate squander the convective heattransfer. An experimental set-up of an uniformly heated Aluminum flat plate of acenterial hollow representing 0.25 of the entire surface area of the plate heated by aconstant heat flux was used basically for this purpose. Experiments were performedfor inclination angles of (0o,15o, 30o, 45o, 60o,75o, 90o)for a region of Rayleighnumber between (151550-1616000).This study showed that the ability of the surfaceto dissipate heat was presented by the average Nusselt number as a function ofRayleigh number depending on the existence of the hollow and the inclination angle.The existing of the hollow increased the value of average Nusselt number up to (39%)in the horizontal state and change sequentially with the inclination angle and itreached the maximum value of (48%) at the angle (75o) and (22%) as a average forall the inclination angles under test as compared with the horizontal state of thepresent hollow surface and reached (59%) with the unhollow inclination surfaces.