In this study, Marshall Stability (MS) of steel fiber reinforced asphalt concrete has been predicted using steel fiber rate (0%, 0.25%, 0.50%, 0.75%, 1.0%, 1.5%, 2.0% and 2.5%), bitumen content (5%, 5.5% and 6.0%) and unit weights (2,465–2,515 gr/cm³) by Fuzzy Logic (FL). Results have shown that developed FL model has a strong potential for predicting the MS of asphalt concrete without performing any experimental studies.