Abstract. If $L \subset M$ is a Legendre submanifold in a Sasaki manifold, then the mean curvature flow does not preserve the Legendre condition. We define a kind of mean curvature flow for Legendre submanifolds which slightly differs from the standard one and then we prove that closed Legendre curves L in a Sasaki space form M converge to closed Legendre geodesics, if $k^2 + \sigma + 3 \leq 0$ and $\mathrm{rot}(L) = 0$, where σ denotes the sectional curvature of the contact plane ξ and k and $\mathrm{rot}(L)$ are the curvature respectively the rotation number of L. If $\mathrm{rot}(L) \neq 0$, we obtain convergence of a subsequence to Legendre curves with constant curvature. In case $\sigma + 3 \leq 0$ and if the Legendre angle α of the initial curve satisfies $\mathrm{osc}\,(\alpha) \leq \pi$, then we also prove convergence to a closed Legendre geodesic.