Let $H$ and $G$ be graphs such that $G$ is a subgraph of $H$. A $G$-decomposition of $H$ is a set $\Delta = \{G_1, G_2, \ldots, G_t\}$ of pairwise edge-disjoint subgraphs of $H$ each of which is isomorphic to $G$ and such that $E(H) = \bigcup_{i=1}^{t} E(G_i)$. A $G$-decomposition of $K_m$ is also known as a $(K_m, G)$-design. The problem of determining all values of $m$ for which there exists a $(K_m, G)$-design is commonly called the spectrum problem for $G$. We settle the spectrum problem for cubic graphs of order 8 by showing that if $G$ is a cubic graph of order 8, then there exists a $(K_m, G)$-design if and only if $m \equiv 1$ or $16 \pmod{24}$. (Received September 25, 2012)