Assume that T and U have heights h_t and h_u and $h_t > h_u$. Remove the smallest element from U. Insert this element into the rightmost node of tree T at height $h_t - h_u - 1$. Link this node to the root of tree U.

The remove operation on U takes $O(\log m)$ time and the insert operation on T takes $O(\log n)$ time.