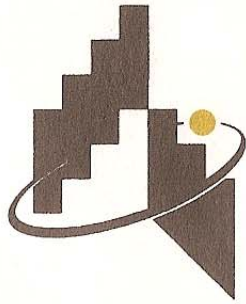


CERTIFICATE



GLOBAL KNOWLEDGE

hereby certifies that

RICH WILLIAMS
has successfully completed

TELECOMMUNICATION FUNDAMENTALS

FEBRUARY 08 - 09, 2000

Approved for 1.4 CEU's
<http://am.globalknowledge.com>

A handwritten signature in black ink, appearing to read "Greg Roels", is written over a horizontal line.

Greg Roels

Chief Operations Officer