

1116-R1-2363 **Russell W Howell*** (howell@westmont.edu), Department of Mathematics, Westmont College,
955 La Paz Road, Santa Barbara, CA 93108. *Rouché's Theorem: Projects and
Pedagogy*. Preliminary report.

It is well known that Rouché's Theorem is a powerful tool in complex analysis, and that it has interesting applications within the field of mathematics, such as using it to provide a simple proof for the fundamental theorem of algebra. Less well known is a simple proof—accessible to undergraduates—of a generalized version of the theorem, and much less than that any applications of the theorem to areas beyond pure mathematics. This talk addresses the latter two issues, and suggests a realistic path that a first course in undergraduate complex analysis might take to allow time for such explorations by means of class projects. (Received September 22, 2015)