1035-13-1136 **Andrew Crabbe*** (s-acrabbe1@math.unl.edu), University of Nebraska - Lincoln, Department of Mathematics, 203 Avery Hall, Lincoln, NE 68588-0130, and **Janet Striuli**. *Hilbert Functions for Ext-Modules.* Preliminary report.

Let M and N be modules over a local ring $(R, \mathfrak{m})$ and i a non-negative integer. The function sending a natural number n to the length of the R-module $\operatorname{Ext}^i_R(M, N/\mathfrak{m}^n N)$ was shown by Kodiyalam and Theodorescu to be given by a polynomial for large n. Upper bounds on the degree of this polynomial are known. We give the precise degree of this polynomial for $i = 0$; and, with some assumptions on the Betti numbers of M, we give lower bounds on the degree for $i > 0$. Following the work of Wiegand and Hassler, we use these results to build indecomposable modules which are maximal Cohen-Macaulay (modulo local cohomology) and have arbitrarily large rank on the punctured spectrum. (Received September 19, 2007)