1030-13-133   **C-Y Jean Chan** (`chan@math.purdue.edu`), Department of Mathematics, Purdue University, 150 N. University Street, West Lafayette, IN 47907, **Christine Cumming*** (`cumming@ulm.edu`), University of Louisiana at Monroe, Department of Mathematics and Physics, 700 University Ave, Monroe, LA 71209, and **Huy Tai Ha** (`tha@tulane.edu`), Department of Mathematics, Tulane University, 6823 St. Charles Ave, New Orleans, LA 70118. *Cohen-Macaulay Multigraded Modules.*

Let S be a standard $\mathbb{N}^r$-graded algebra over a local ring A and let M be a finitely generated $\mathbb{Z}^r$-graded module over S. We will show that the vanishing of certain sheaf cohomology modules is both necessary and sufficient to characterize the Cohen-Macaulayness of M. Then we will apply this result to investigate the Cohen-Macaulayness of the Rees module and the multi-Rees module. (Received July 28, 2007)