

Abstract of the two lectures on Mar 01 and Mar 02, 2019
(at the Department of Mathematics, IIT Bombay)

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Title : Hilbert-Samuel functions

Continuing from the two lectures on Jan 28 and Jan 31, 2019 on `S o m e q u e s t i o n s o n t h e H i l b e r t - S a m u e l f u n c t i o n s`, in these two lectures on Mar 01 and Mar 04, 2019, we prove the Theorem 2 which is more general than the Theorem 1 which was proved in last lectures. More precisely, we prove the following theorem :

Theorem 2 *Let A be a noetherian excellent local ring and $\mathfrak{p} \in \text{Spec } A$ with $d := \dim A/\mathfrak{p}$. Then*
$$H_{A_{\mathfrak{p}}}^{(d)} \leq H_A^{(0)} .$$
