KFUPM
Department of Mathematics and Statistics

MATH 555 – PROJECT

DIMENSION THEORY

M. Atiyah – I. MacDonald, Introduction to Commutative Algebra

Page	Theme	Main Results
116	Hilbert Functions	**11.1** $\rightarrow$ 11.3
119	Dimension Theory of Noetherian Local Rings	11.7 $\rightarrow$ **11.14**
123	Regular Local Rings	11.15, 11.20, **11.22**

Assignments

1. Study Chapter 11 (i.e., Dimension Theory) based on the above plan. Re-write the proofs in your own words and style and give more details when appropriate. You may refer to results from Chapter 10 without proof.
2. You'll give a 75-minute talk where you'll be requested to elaborate on some specific results.
3. **A written report should be submitted on Saturday, May 16.**

Schedule of Talks

Name	Date
W. Al-Khulaifi	Monday, May 7
H. Hroub	Saturday, May 12
A. Kadri	Monday, May 14

References

1. M. F. Atiyah & I. G. Macdonald, Introduction to Commutative Algebra, Paperback edition, Perseus Publishing, December 1994.
2. N. Bourbaki, Commutative Algebra, Hermann, Paris, 1972.
3. R. Gilmer, Multiplicative Ideal Theory, Marcel Dekker, New York, 1972.
4. I. Kaplansky, Commutative Rings, Univ. of Chicago Press, Chcago, 1974.
5. H. Matsumura, Commutative Ring Theory, Cambridge University Press, Cambridge, 1989.
6. M. Nagata, Local rings, Robert E. Krieger Publishing Co., Huntington, N.Y., 1975.