

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Term 071

MATH 653
ADVANCED TOPICS IN COMMUTATIVE ALGEBRA

1. BOOK.

Prüfer domains by M. Fontana, J. A. Huckaba, and I. J. Papick, Monographs and Textbooks in Pure & Applied Mathematics, Vol. 203. Marcel Dekker New York, **1997**.

2. RESEARCH PAPER.

E. Houston, S. Kabbaj, T. Lucas, and A. Mimouni, When is the Dual of an Ideal a Ring?, Journal of Algebra 225 (**2000**) 429-450.

3. DESCRIPTION & SYLLABUS

Week	Material
1-2	Particular Overrings of Prüfer Domains. When is Γ^{-1} a ring?
3	Other representation theorems
4	When equalities occur among overrings
5-6	Applications of the Theory of Overrings. Divisorial ideals
7-9	Trace properties
10-11	When all ideals are divisorial
12	When is the Dual of an Ideal a Ring? Some results in the general case
13	Radical ideals
14	The integrally closed case
15	Examples