

COMMUTATIVE ALGEBRA

- Nilpotent elements; prime ideals
- Radicals in the commutative case
- > Chinese remainder theorem
- > Tensor product, flatness; various isomorphisms
- > Localization
- > Hilbert Basis Theorem
- > Artin rings
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- > *Tensor, symmetric, and exterior algebras
- > *Dedekind domains and their modules
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- > Integral elements and extensions; going-up theorem
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- > *Hilbert Nullstellensatz
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- > *Assassinator and support
- > *Spec
- > *Noether normalization
- > *Valuations; completions
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> WEDDERBURN THEORY

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- > Semi-simple modules
- > Schur's lemma
- > Structure of semi-simple rings [Rei. 1.7a]
- > Rings with minimum condition
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- > *Jacobson's density theorem
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> References

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- > [A-M] Atiyah & Macdonald, Introduction to Commutative Algebra
- > [Ci] P. Cohn, Algebra, volume i (i = 1, 2)
- > [H-S] Hilton & Stammbach, A Course in Homological Algebra
- > [J] Jacobson, Basic Algebra I
- > [L] Lang, Algebra
- > [R] Rotman, The Theory of Groups
- > [Rei] Reiner, Maximal Orders
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