

# Contents

<b>Preface</b>	<b>ix</b>
<b>1 Commutative rings and subrings</b>	<b>1</b>
<b>2 Ideals</b>	<b>18</b>
<b>3 Prime ideals and maximal ideals</b>	<b>37</b>
<b>4 Primary decomposition</b>	<b>61</b>
<b>5 Rings of fractions</b>	<b>80</b>
<b>6 Modules</b>	<b>101</b>
<b>7 Chain conditions on modules</b>	<b>123</b>
<b>8 Commutative Noetherian rings</b>	<b>145</b>
<b>9 More module theory</b>	<b>167</b>
<b>10 Modules over principal ideal domains</b>	<b>185</b>
<b>11 Canonical forms for square matrices</b>	<b>208</b>
<b>12 Some applications to field theory</b>	<b>220</b>
<b>13 Integral dependence on subrings</b>	<b>243</b>
<b>14 Affine algebras over fields</b>	<b>264</b>
<b>15 Dimension theory</b>	<b>288</b>