

Contents

Preface	
Introduction and summary of results	1
Notation	7
I. Stochastic integration	12
1. Stochastic integrals	12
2. Decompositions	29
3. Inequalities	49
4. Stochastic integrals with respect to adapted measurable processes	66
5. Path independence of stochastic integrals, stochastic counterparts of Green's and Stokes' formula	73
II. Stochastic differential equations	83
1. Preliminaries	83
2. Existence, uniqueness and explosions of strong solutions	92
3. Conditions for non-explosion and stability of strong solutions	101
4. The Freidlin-Wentzell estimations	112
5. Application of the large deviations principle to the infinite dimensional heat equation	124
6. Markov property of solutions of stochastic differential equations and of stochastic partial differential equations	129
Appendix: Special stochastic differential equations without Lipschitz conditions	139
III. Special processes	143
1. Harnesses	143
2. Special Markov properties	152
3. Occupation integrals and the local time of the multi-parameter Wiener process	164
Bibliographical remarks	185
References	188
Index	196