Copulas: basic definitions and properties	p. 1
Notations	p. 1
Preliminaries on random variables and distribution functions	p. 2
Definition and first examples	p. 10
Characterisation in terms of properties of d.f.'s	p. 14
Continuity and absolutely continuity	p. 18
The derivatives of a copula	p. 21
Characterisation of bivariate copulas via Dini derivatives	p. 22
The space of copulas	p. 26
Lattice properties	p. 26
Metric properties	p. 28
Symmetry	p. 30
Asymmetrisation of copulas	p. 34
Graphical representations	p. 35
Copulas and stochastic dependence	p. 39
Construction of multivariate stochastic models via copulas	p. 39
Sklar's theorem	p. 42
Sklar's theorem for survival functions	p. 47
Proofs of Sklar's theorem	p. 48
Proof of Sklar's theorem by extension	p. 49
Proof of Sklar's theorem by distributional transform	p. 53
Proof of Sklar's theorem by regularisation	p. 54
Copulas and rank-invariant property	p. 57
Characterisation of basic dependence structures via copulas	p. 63
Copulas and order statistics	p. 68
Diagonal sections of copulas and tail dependence	p. 73
Copulas and measures	p. 75
Copulas and d-fold stochastic measures	p. 75
Doubly stochastic matrices and discrete copulas	p. 78
Absolutely continuous and singular copulas	p. 82
Copulas with fractal support	p. 86
Copulas, conditional expectation and Markov kernel	p. 90
Copulas and measure-preserving transformations	p. 95
Shuffles of a copula	p. 98
Shuffles of Min	p. 101
Sparse copulas	p. 107
Ordinal sums	p. 112
The Kendall distribution function	p. 115
Copulas and approximation	p. 123
Uniform approximations of copulas	p. 123

Checkerboard copulas	p. 123
Bernstein copulas	p. 128
Sparse copulas	p. 131
Application to weak convergence of multivariate d.f.'s	p. 134
Markov kernel representation and related distances	p. 137
Copulas and Markov operators	p. 146
Bivariate copulas and Markov operators	p. 152
Convergence in the sense of Markov operators	p. 156
The Markov product of copulas	p. 161
The Markov product	p. 161
Invertible and extremal elements in I ₂	p. 164
Idempotent copulas, Markov operators and conditional expectations	p. 170
The Markov product and Markov processes	p. 175
A generalisation of the Markov product	p. 183
A compendium of families of copulas	p. 189
What is a family of copulas?	p. 190
Fréchet copulas	p. 192
EFGM copulas	p. 192
Marshall-Olkin copulas	p. 194
Archimedean copulas	p. 196
Extreme-value copulas	p. 203
Elliptical copulas	p. 208
Invariant copulas under truncation	p. 210
Generalisations of copulas: quasi-copulas	p. 215
Definition and first properties	p. 215
Characterisations of quasi-copulas	p. 218
Proof of Theorem 7.2.4	p. 222
The space of quasi-copulas and its lattice structure	p. 230
Bounds for copulas with given diagonal	p. 237
Mass distribution associated with a quasi-copula	p. 239
Generalisations of copulas: semi-copulas	p. 249
Definition and basic properties	p. 249
Bivariate semi-copulas, triangular norms and fuzzy logic	p. 251
Relationships between capacities and semi-copulas	p. 255
Transforms of semi-copulas	p. 259
Transforms of bivariate semi-copulas	p. 267
Semi-copulas and level curves	p. 271
Multivariate ageing notions of NBU and IFR	p. 274
Bibliography	p. 285
Index	p. 313

Table of Contents provided by Blackwell's Book Services and R.R. Bowker. Used with permission.