Books:

Structural Aspects in the Theory of Probability
Heyer, Herbert.
Call #: QA273.43 .H53 2009eb

Basic Concepts of Probability and Statistics
Hodges, J. L. (Joseph Lawson), 1922
San Francisco: Holden Day, c1970
Call #: QA273 .H66 1970

Probability for Statisticians
Shorack, Galen R., 1939
Call #: QA273 .S548 2000eb

Encyclopedia Articles:

Logic Probability from Stanford Encyclopedia http://plato.stanford.edu/entries/logic-probability/


Websites:


General Math Resources:

MIT Mathlets http://mathlets.org/mathlets/


Library Guide:

Mathematics and Philosophy of Number
http://libguides.tourolib.org/c.php?g=114188&p=743118
Probability topics and RT (related Terms)

1 General aspects
2 Foundations of probability theory
3 Random variables
4 Conditional probability
5 Theory of probability distributions
6 Properties of probability distributions
7 Applied probability
8 Stochastic processes
9 Geometric probability
10 Gambling
11 Coincidence
12 Algorithmics
13 Financial mathematics
14 Genetics
15 Historical

General aspects

Probability
Randomness, Pseudorandomness, Quasirandomness
Randomization, hardware random number generator
Random number generator
Random sequence
Uncertainty
Statistical dispersion
Observational error
Equi probable
Equi possible
Average
Probability interpretations
Markovian
Statistical regularity

Central tendency
Bean machine
Relative frequency
Frequency probability
Maximum likelihood
Bayesian probability
Principle of indifference
Credal set
Cox’s theorem
Principle of maximum entropy
Information entropy
Urn problems
Extractor
Aleatoric, aleatoric music
Free probability
Exotic probability
Schrödinger method
Empirical measure
Glivenko–Cantelli theorem
Zero-one law
Kolmogorov’s zero-one law
Hewitt–Savage zero-one law
Law of Truly Large Numbers
Littlewood’s law
Infinite monkey theorem
Littlewood–Offord problem
Inclusion-exclusion principle
Impossible event
Information geometry
Talagrand’s concentration inequality

Probability theory
Probability space
Sample space
Standard probability space

Random element
Random compact set
Dynkin system
Probability axioms
Normalizing constant
Event (probability theory)
Complementary event
Elementary event
Mutually exclusive
Boole’s inequality
Probability density function
Cumulative distribution function
Law of total cumulance
Law of total expectation
Law of total probability
Law of total variance
Almost surely
Cox’s theorem
Bayesianism
Prior probability
Posterior probability
Borel’s paradox
Bertrand’s paradox
Coherence (philosophical gambling strategy)
Dutch book
Algebra of random variables
Belief propagation
Transferable belief model
Dempster–Shafer theory
Possibility theory

Random variables

Discrete random variable
Probability mass function
Constant random variable
Expected value
Jensen's inequality
Variance
Standard deviation
Geometric standard deviation
Multivariate random variable
Joint probability distribution
Marginal distribution
Kirkwood approximation
Independent identically-distributed random variables
Independent and identically-distributed random variables
Statistical independence
Conditional independence
Pairwise independence
Covariance
Covariance matrix
De Finetti's theorem
Correlation
Uncorrelated
Correlation function
Canonical correlation
Convergence of random variables
Weak convergence of measures
Helly–Bray theorem
Slutsky's theorem
Skorokhod's representation theorem
Lévy's continuity theorem
Uniform Integrability
Markov's inequality
Chebyshev's inequality = Chernoff bound
Chernoff's inequality
Bernstein inequalities (probability theory)
Hoeffding's inequality
Kolmogorov's inequality
Etemadi's inequality
Khintchine inequality
Paley–Zygmund inequality
Laws of large numbers
Asymptotic equipartition property
Typical set
Law of large numbers
Kolmogorov's two-series theorem
Random field
Conditional random field
Borel–Cantelli lemma
Wick product

**Conditional probability**

Conditioning (probability)
Conditional expectation
Conditional probability distribution
Regular conditional probability
Disintegration theorem
Bayes' theorem
de Finetti's theorem
Exchangeable random variables
Rule of succession
Conditional independence
Conditional event algebra
Goodman–Nguyen–van Fraassen algebra

**Theory of probability distributions**

Probability distribution
Probability distribution function
Probability density function
Probability mass function
Cumulative distribution function
Quintile
Moment (mathematics)
Moment about the mean
Standardized moment
Skewness
Kurtosis
Locality
Cumulant
Factorial moment
Expected value
Law of the unconscious statistician
Second moment method
Variance
Coefficient of variation
Variance-to-mean ratio
Covariance function
An inequality on location and scale parameters
Taylor expansions for the moments of functions of random variables
Moment problem
Hamburger moment problem
Carleman's condition
Hausdorff moment problem
Trigonometric moment problem
Stieltjes moment problem
Prior probability distribution
Total variation distance
Hellinger distance
Wasserstein metric
Lévy–Prokhorov metric
Lévy metric
Continuity correction
Heavy-tailed distribution
Truncated distribution
Infinite divisibility
Stability (probability)
Indecomposable distribution
Power law
Anderson's theorem
Probability bounds analysis
Probability box

Properties of probability distributions

Central limit theorem
Illustration of the central limit theorem
Concrete illustration of the central limit theorem
Berry–Esseen theorem
Berry–Esseen theorem
De Moivre–Laplace theorem
Lyapunov's central limit theorem
Martingale central limit theorem
Infinite divisibility (probability)
Method of moments (probability theory)
Stability (probability)
Stein's lemma
Characteristic function (probability theory)
Lévy continuity theorem
Edgeworth series
Helly–Bray theorem
Location parameter
Maxwell's theorem

Factorial moment generating function
Negative probability
Probability-generating function
Vysochanskii–Petunin inequality
Mutual information
Kullback–Leibler divergence
Normally distributed and uncorrelated does not imply independent
Le Cam's theorem
Large deviations theory
Contraction principle (large deviations theory)
Varadhan's lemma
Tilted large deviation principle
Rate function
Laplace principle (large deviations theory)
Exponentially equivalent measures
Cramér's theorem (second part)

Applied probability

Empirical findings
Benford's law
Pareto principle
Zipf's law
Boy or Girl paradox

Stochastic processes

Adapted process
Basic affine jump diffusion
Bernoulli process
Bernoulli scheme

Branching process
Point process
Chapman–Kolmogorov equation
Chinese restaurant process
Coupling (probability)
Ergodic theory
Maximal ergodic theorem
Ergodic (adjective)
Galton–Watson process
Gauss–Markov process
Gaussian process
Gaussian random field
Gaussian isoperimetric inequality
Large deviations of Gaussian random functions
Girsanov's theorem
Increasing process
Itô's lemma
Jump diffusion
Law of the iterated logarithm
Lévy flight
Lévy process
Loop-erased random walk
Markov chain
Examples of Markov chains
Detailed balance
Markov property
Hidden Markov model
Maximum-entropy Markov model
Markov chain mixing time
Markov partition
Markov process
Continuous-time Markov process
Piecewise-deterministic Markov process
Martingale
Doob martingale
Optional stopping theorem
Martingale representation theorem
Azuma’s inequality
Wald’s equation
Poisson process
Poisson random measure
Population process
Process with independent increments
Progressively measurable process
Queueing theory
Erlang unit
Random walk
Random walk Monte Carlo
Renewal theory
Skorokhod’s embedding theorem
Stationary process
Stochastic calculus
Itô calculus
Malliavin calculus
Stratonovich integral
Time series analysis
Autoregressive model
Moving average model
Autoregressive moving average model
Autoregressive integrated moving average model
Anomaly time series
Voter model
Wiener process
Brownian motion
Geometric Brownian motion
Donsker’s theorem
Empirical process
Wiener equation
Wiener sausage

**Geometric probability**

Buffon’s needle
Integral geometry
Hadjwiger’s theorem
Wendel’s theorem

**Gambling**

Luck
Game of chance
Odds
Gambler’s fallacy
Inverse gambler’s fallacy
Parrondo’s paradox
Pascal’s wager
Gambler’s ruin
Poker probability
Poker probability (Omaha)
Poker probability (Texas hold ‘em)
Pot odds
Roulette
Martingale (betting system)
The man who broke the bank at Monte Carlo
Lottery
Lottery machine
Pachinko
Coherence (philosophical gambling strategy)
Coupon collector’s problem

**Coincidence**

Birthday paradox
Birthday problem

Index of coincidence
Bible code
Spurious relationship
Monty Hall problem

**Algorithmics**

Probable prime
Probabilistic algorithm ≠ Randomised algorithm
Monte Carlo method
Las Vegas algorithm
Probabilistic Turing machine
Stochastic programming
Probabilistically checkable proof
Box–Muller transform
Metropolis algorithm
Gibbs sampling
Inverse transform sampling method
Walk-on-spheres method

**Financial mathematics**

Risk
Value at risk
Market risk
Risk-neutral measure
Volatility
Technical analysis
Kelly criterion

**Genetics**

Punnett square
Hardy–Weinberg principle
Ewens’s sampling formula
Population genetics