# Understanding and Applying Cryptography and Data Security

*By Adam J. Elbirt*



**Understanding and Applying Cryptography and Data Security** By Adam J. Elbirt

*A How-to Guide for Implementing Algorithms and Protocols*
Addressing real-world implementation issues, **Understanding and Applying Cryptography and Data Security** emphasizes cryptographic algorithm and protocol implementation in hardware, software, and embedded systems. Derived from the author's teaching notes and research publications, the text is designed for electrical engineering and computer science courses.

*Provides the Foundation for Constructing Cryptographic Protocols*
The first several chapters present various types of symmetric-key cryptographic algorithms. These chapters examine basic substitution ciphers, cryptanalysis, the Data Encryption Standard (DES), and the Advanced Encryption Standard (AES). Subsequent chapters on public-key cryptographic algorithms cover the underlying mathematics behind the computation of inverses, the use of fast exponentiation techniques, tradeoffs between public- and symmetric-key algorithms, and the minimum key lengths necessary to maintain acceptable levels of security. The final chapters present the components needed for the creation of cryptographic protocols and investigate different security services and their impact on the construction of cryptographic protocols.

*Offers Implementation Comparisons*
By examining tradeoffs between code size, hardware logic resource requirements, memory usage, speed and throughput, power consumption, and more, this textbook provides students with a feel for what they may encounter in actual job situations.

*A solutions manual is available to qualified instructors with course adoptions.*

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## Editorial Review

Review

*This book is a good technical reference for someone who wishes to implement (or install) a security system based on existing techniques ... a good complementary book for a technical course to students who already know about the theory of cryptography but need to learn the technical details in order to implement existing protocols in new hardware.*
?Jeremy Barbay, University of Chile, in *SIGACT NEWS*, December 2011

## Users Review

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The event that you get from Understanding and Applying Cryptography and Data Security may be the more deep you digging the information that hide inside the words the more you get thinking about reading it. It doesn't mean that this book is hard to be aware of but Understanding and Applying Cryptography and Data Security giving you buzz feeling of reading. The writer conveys their point in particular way that can be understood by anyone who read that because the author of this guide is well-known enough. This particular book also makes your vocabulary increase well. That makes it easy to understand then can go with you, both in printed or e-book style are available. We recommend you for having this particular Understanding and Applying Cryptography and Data Security instantly.

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