

**BIRZEIT UNIVERSITY**  
**FACULTY OF GRADUATE STUDIES**

**EFFICIENT ELLIPTIC CURVE CRYPTOSYSTEMS**  
**USING EFFICIENT EXPONENTIATION**

**by**

**Kamal Darweesh**

**A Thesis Submitted in Partial Fulfillment of the Requirement for the**  
**Master Degree in Scientific Computing From the Graduate**  
**Faculty at Birzeit University**

**Supervisor**

**Professor Mohammad Saleh**  
**Department of Mathematics**

**Birzeit, Palestine**  
**August, 2006**