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Sommario/riassunto	These lecture notes aim at providing a purely analytical and accessible proof of the Callias index formula. In various branches of mathematics (particularly, linear and nonlinear partial differential operators, singular integral operators, etc.) and theoretical physics (e.g., nonrelativistic and relativistic quantum mechanics, condensed matter physics, and quantum field theory), there is much interest in computing Fredholm indices of certain linear partial differential operators. In the late 1970's, Constantine Callias found a formula for the Fredholm index of a particular first-order differential operator (intimately connected to a supersymmetric Dirac-type operator) additively perturbed by a

potential, shedding additional light on the Fedosov-Hörmander Index Theorem. As a byproduct of our proof we also offer a glimpse at special non-Fredholm situations employing a generalized Witten index