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In this monograph the author develops the spectral theory for an nth order two-point differential operator L in the Hilbert space $L2[0,1]$, where L is determined by an nth order formal differential operator ℓ having variable coefficients and by n linearly independent boundary values $B 1, \ldots, B n$. Using the Birkhoff approximate solutions of the differential equation $(\rhon I - \ell)u = 0$, the differential operator L is classified as belonging to one of three possible classes: regular, simply irregular, or degenerate irregular. For the regular and simply irregular classes, the author develops asymptotic expansions of solutions of the differential equation $(\rhon I - \ell)u = 0$, constructs the characteristic determinant and Green's function, characterizes the eigenvalues and the corresponding algebraic multiplicities and ascents, and shows that the generalized eigenfunctions of L are complete in $L2[0,1]$. He also gives examples of degenerate irregular differential operators illustrating some of the unusual features of this class.