From *Semiconductor Physics and Devices: Basic Principles* (4th Edition), Donald A. Neamen, McGraw Hill, 2012, ISBN 978-0-07-352958-5.

Type *n* (more electrons)

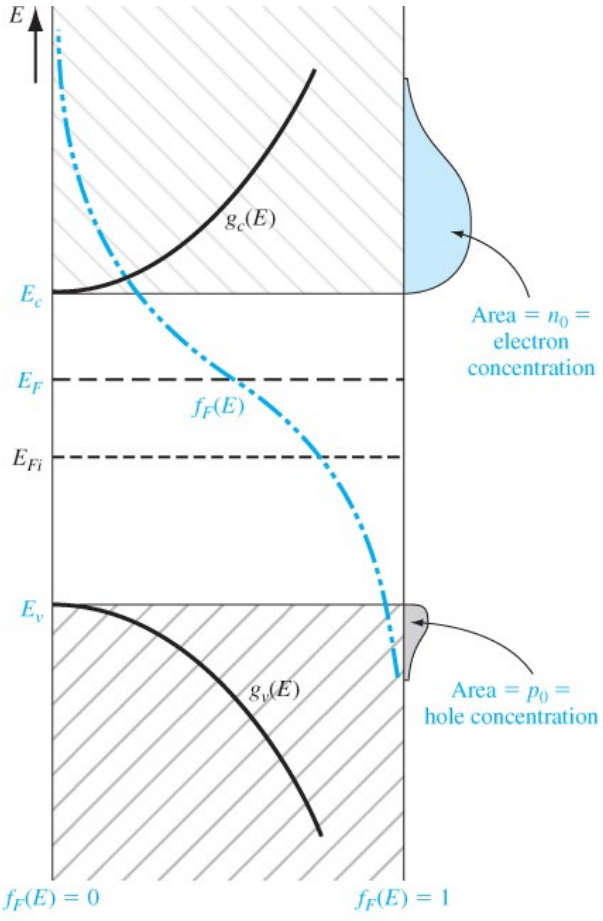

Figure 4.8 | Density of states functions, Fermi–Dirac probability function, and areas representing electron and hole concentrations for the case when E_F is above the intrinsic Fermi energy.

Type *p* (more holes)

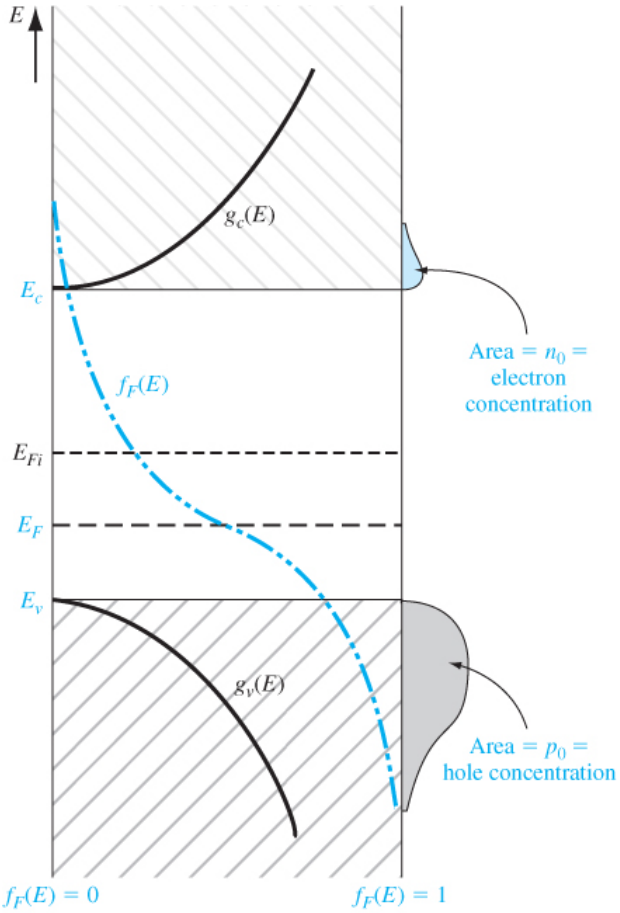

Figure 4.9 | Density of states functions, Fermi–Dirac probability function, and areas representing electron and hole concentrations for the case when E_F is below the intrinsic Fermi energy.

- Note that $E_F > E_{Fi}$ for the type *n* extrinsic semiconductor with donors.
- Note that $E_F < E_{Fi}$ for the type *p* extrinsic semiconductor with acceptors.