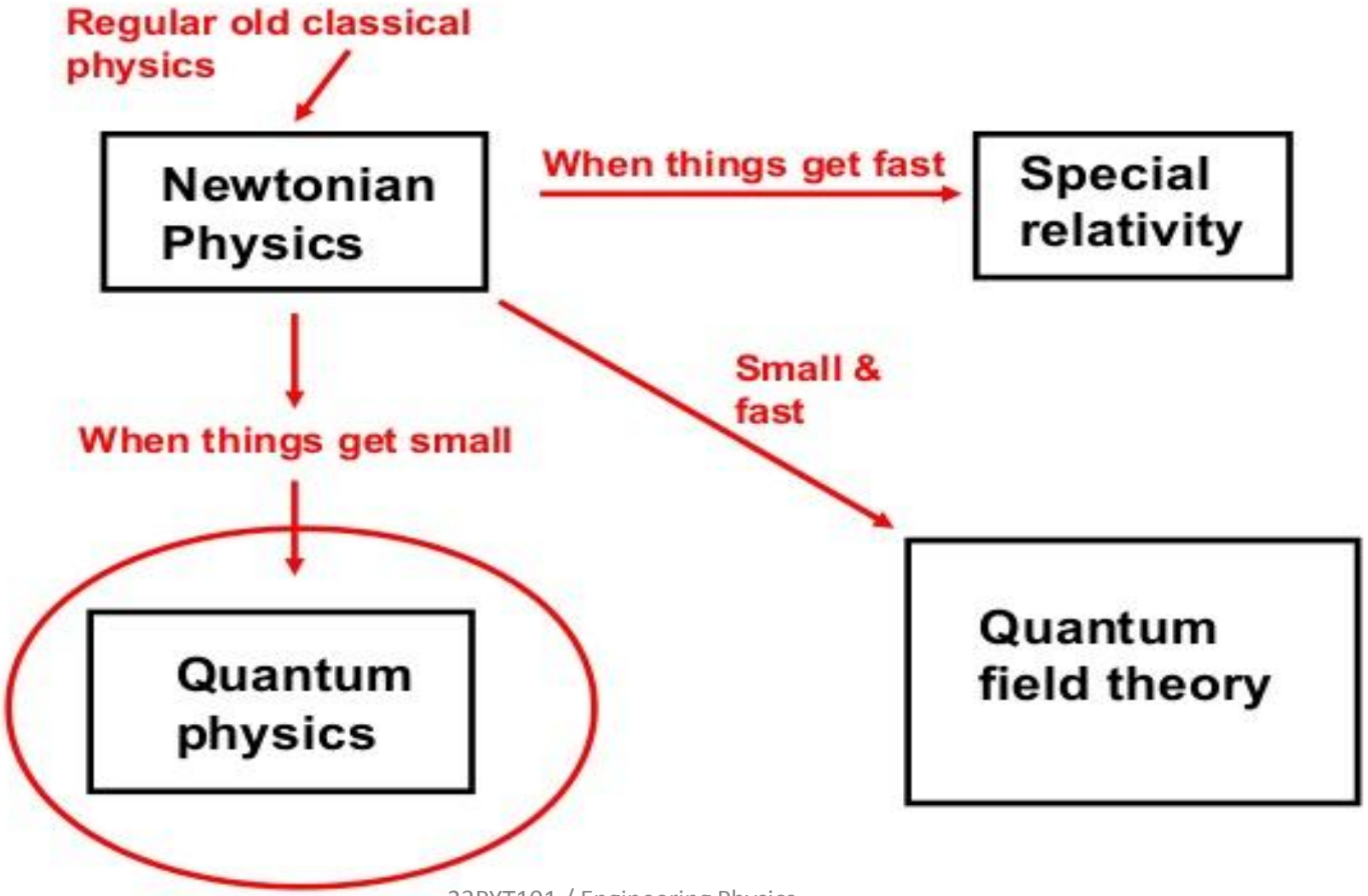
UNIT-II

QUANTUM PHYSICS

ORIGIN OF QUANTUM PHYSICS



Why Quantum Physics?

- Classical mechanics (Newton's mechanics) and Maxwell's equations (electromagnetic theory) can explain **MACROSCOPIC** phenomena such as motion of billiard balls or rockets.
- Quantum mechanics is used to explain **microscopic** phenomena such as **photon-atomic scattering** and the flow of electrons in a semiconductor. The behavior of a **"microscopic"** particle is **different** from that of a classical particle:

  - in some experiments it resembles the behavior of a **classical wave (not localized in space)**

  - in other experiments it behaves as a classical **particle (localized in space)**

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