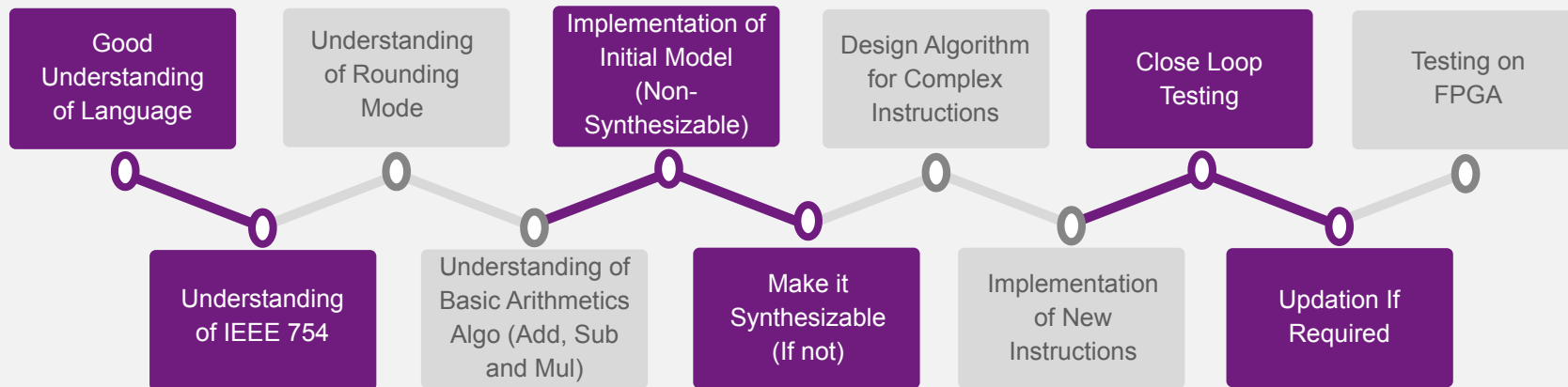بِسْمِ اللهِ الرَّحْمَنِ الرَّحِيمِ

(In the name of Allah, the Most Beneficent and the Most Merciful)

Road Map to FPU (AIRS)

Good Understanding of Language

Understanding of Rounding Mode

Implementation of Initial Model (Non-Synthesizable)

Design Algorithm for Complex Instructions

Close Loop Testing

Testing on FPGA

Understanding of IEEE 754

Understanding of Basic Arithmetics Algo (Add, Sub and Mul)

Make it Synthesizable (If not)

Implementation of New Instructions

Updation If Required

DO AND DON'Ts

- Design whole algorithm at once instead of first designing algorithm for normal numbers first and then adding logic for subnormal numbers.
- Rounding modes should be kept is mind too while designing algorithms, since addition of rounding modes can alter the algorithms.
- Algorithms must be designed directly for parameterized instructions instead of first designing algorithms for single standard and then parameterizing them. Since algorithms changes a lot once parameterization is introduced.
- Algorithms must be tested through manual solving first to make sure that all corner cases and exceptions are handle effectively.