CHAPTER 3
SCOPE AND OBJECTIVES

Construction becomes a major part of development of a country. The existing structures require repair or up-gradation of structural elements due to damage or increase in load demand. Several techniques are adopted for strengthening of structures. This study proposes a methodology for retrofitting of beams using FRP sheets. This objective is planned to be achieved by an experimental study on RC beams retrofitted with GFRP and CFRP sheets followed by an investigation using ANSYS modelling.

In view of facts and circumstances, the aims have been set as follows:

i) To develop a mix proportioning to manufacture cement concrete of different grades of concrete and determination of short term properties of concrete.

ii) To study the flexural behaviour of M 20 grade RC beams retrofitted with single, double and triple layers of GFRP sheets.

iii) To study the flexural behaviour of M 30, M 40, M 50 and M 60 grade RC beams retrofitted with single, double and triple layers with CFRP sheets.

iv) To study the effect of FRP strengthening on flexural strength, deflection and crack width of beams.

v) To study the influence of FRP sheets on the ductility behaviour of retrofitted RC beams.

vi) To analyse all the beams using ANSYS modelling and compare with the experimental results.

Specific conclusions on the flexural behaviour of control and retrofitted beams will be drawn, based on the experimental and analytical investigations.