

### **MT-614 Scientific Methods & Research Practice**

An overview of important characteristics within technological research and development: Aims and methods, the relation between pure science on the one hand and applied research on the other, the relation between research and practice, and the relation between technology and society. Models of technology and their dependence on external influences in society. Different views of science; in particular the rationalist, empiricist, positivist, Kuhnian and falsificationist views. Instrumentalism and realism is also covered. Implications for the question of the rationality of science and technology; their limits and possibilities. Basic epistemological limitations such as the problem of observation and of induction in basic science and problems of knowledge about functionality and usefulness in technological research. Skills of presenting arguments and results of scientific and technological research.

#### **Reference Book(s)**

Scientific methods in practice by Hugh G. Gough. Jr., 2003