

# Riemann Integral and the Weaker Forms of Continuity

By

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In my talk, I would primarily like to deliberate upon the affair of vector – valued integration for functions taking values in a Banach space. In the light of this - abstract versions of, one of the celebrated results of classical analysis viz; Fundamental Theorem of Calculus (FTC) will be discussed. Lastly two natural questions regarding the (vector – valued) Riemann integration will be explored:

1. Given a Banach space  $X$  , determine necessary and sufficient conditions for the Riemann integrability of a function  $f : [0, 1] \rightarrow X$  .
2. Characterize Banach spaces for which weaker forms of continuity is equivalent to Riemann integrability.