Outline of Lecture 1

1. The inductive structure of this course

2. Rapid Course in Special Relativity

   (1) P. of R.
   (2) Free float ("inertial") frames
   (3) Isotropy of space

Next Lecture
   (4) Invariance of the Interval
   (5) Relativity of simultaneity.

The purpose of this course is to develop and then perform a conceptual integration - a marriage - between multilinear algebra and multi-variable calculus on steroids. The result will be modern differential geometry, an expression of moving frames codified by means of Cartan's two universal structural equations.

Special relativity is the source, the precondition for this conceptual integration - Cartan's two structural equations is the result.