duals; 2. Distributions and generalized functions; 3. The two-sided Laplace transformation; 4. The Mellin transformation; 5. The Hankel transformation; 8. The convolution transformation; 9. Transformations arising from orthogonal series.

The level of the book is that of the mature graduate student, though he would be greatly helped by some knowledge of the classical theory of integral transformations. While the book is primarily for mathematicians, almost all applied mathematicians could read it profitably, for there are many results for which they could find immediate use, and a number of illustrative applications are given.

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Formes différentielles. BY HENRI CARTAN. Hermann, Paris (1967). 188 pp.

This book belongs to the series edited newly by Professors H. Cartan, J. Dieudonné and J. P. Serre for the purpose of providing upper undergraduates with somewhat modern mathematics. Chapter I is devoted to characterize the notion of differential form of degree r, and it is defined to be a morphism ω; $U \to \mathscr{A}_r(E, F)$ where U is an open subset of Banach space and F another Banach space. After inquiring the condition for an element ω of differential forms $\Omega_r^{(n)}(U, F)$ to be exact by means of exterior derivation, the classical Frobenius theorem is proved in a refined fashion. Chapter II can rather be regarded as being subsidiary to what follows in Chapter III. Curvilinear integral and variation calculus are formulated in terms of $\Omega_r^{(n)}(U, F)$, $2 \geq r \geq 1$. Chapter III reveals the role that differential forms play in differential geometry by limiting the objectives to those on surfaces in E^3. The canonical 1-forms ω_i associated to the moving frame field and the connection forms ω_{ij} are shown to agree with all the definition and properties of Ω's stated in Chapter I. The formula of Gauss curvature is derived from the structure equations that are composed with ω_i and ω_{ij} with respect to the orthonormal frames, and by using the Green theorem so-called Gauss–Bonnet formula is presented. The readers will then know that $\Omega_r^{(n)}(U, F)$ serves to connect differential geometry with homology.

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Foundations of Differential Geometry, II. BY S. KOBAYASHI AND K. NOMIZU. Interscience Publication, Wiley, New York (1969).

This book is a continuation of Volume I of the authors' "Foundation of Differential Geometry". The chapter numbers continue from Volume I and the same notations are preserved whenever it is possible. The topic opens with Chapter

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