**Título:** Introduction To Vassiliev Knot Invariants

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**Sinopsis**

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With hundreds of worked examples, exercises and illustrations, this detailed exposition of the theory of Vassiliev knot invariants opens the field to students with little or no knowledge in this area. It also serves as a guide to more advanced material. The book begins with a basic and informal introduction to knot theory, giving many examples of knot invariants before the class of Vassiliev invariants is introduced. This is followed by a detailed study of the algebras of Jacobi diagrams and 3-graphs, and the construction of functions on these algebras via Lie algebras. The authors then describe two constructions of a universal invariant with values in the algebra of Jacobi diagrams: via iterated integrals and via the Drinfeld associator, and extend the theory to framed knots. Various other topics are then discussed, such as Gauss diagram formulae, before the book ends with Vassiliev's original construction.

Assumes no prior knowledge of knot theory

Includes hundreds of worked examples, illustrations and exercises to suit graduate and undergraduate students

Explores connections with graph theory, number theory, Lie algebras, group theory and algebraic topology to help readers understand the theory in context