Two Questions

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1. Given a metrized Lie algebra and a f.d. representation thereof, there exists an associated invariant of knots.

Why?

The full answer should fit in a semester-long course, with no black boxes.
Note that an answer that restricts to semisimple Lie algebras cannot be "right".

[The only answer I know goes via F.T. invariants]

2. Given a metrized Lie algebra and a f.d. representation thereof, there exists an associated Laurant-polynomial-valued invariant of knots.

Why?

The full answer should fit in a semester-long course, with no black boxes.

I don't know an answer to question 2.

* I don't know if it is at all true, for metrized but non-semi-simple Lie algebras.

* Even restricting to semi-simple, I don't know a no-black-box answer that fits in a one-semester course.

To be honest, personally I don't know the answer (to question 2, in the semi-simple case) even removing the one-semester requirement, but I know that it appears in print in books on quantum groups.