Monoidal categories versus (quasi-)quantum groups

Lecture 1

- Braided monoidal categories.

- The centre construction, Yetter-Drinfeld module categories.

- Reconstruction theorems and (quasi-)quantum groups derived from them.

Lecture 2

- Two-sided two-cosided Hopf modules vs Yetter-Drinfeld modules.

- Algebras, coalgebras, bialgebras and Hopf algebras within two-sided two-cosided Hopf module categories.

- Duoidal categories.

- The structure of a (quasi-)quantum group with a (weak) projection.

Lecture 3

- Sovereign, balanced and ribbon categories, and the (quasi-)quantum groups corresponding to them.

- Ribbon categories obtained from rigid monoidal categories.

- A class of ribbon (quasi-)quantum groups.

- Some ribbon elements for $D^\omega(H)$ and $D^\omega(G)$.

Lecture 4

- Double-biproduct (quasi-)quantum groups; the connections between Majid and Bespalov-Drabant constructions.

- 2-cocycle deformations vs braided equivalences.

- The double bosonization process for (quasi-)quantum groups.

- Examples (including the famous Drinfeld-Jimbo quantum groups).