Recall this schema, which we have used many times in class.

Question 1. [5 MARKS]

Part (a) [1 MARK]

According to the schema, can a student take the same course more than once?

Solution: [Yes] No.

Part (b) [2 MARKS]

Consider this constraint:

$$Ploot(instructor1, instructor2, term) :=$$

$$\Pi_{O1.instructor1, O2.instructor2, O1.term} \sigma_{\substack{O1.instructor < O2.instructor \\ \wedge \\ O1.dept = O2.dept = `CSC' \\ \wedge \\ O1.cNum = O2.cNum \\ \wedge \\ O1.term = O2.term}} [(\rho_{O1} Offering) \times (\rho_{O2} Offering)]$$

$$\sigma_{\substack{P1.instructor1 = P2.instructor1 \\ \wedge \\ P1.instructor2 = P2.instructor2 \\ \wedge \\ P1.term \neq P2.term}} [(\rho_{P1} Ploot) \times (\rho_{P2} Ploot)] = \emptyset$$