

### Problem 6.1 (Scheduling CS Classes as a CSP):

1. Formulate this problem as a binary CSP problem:

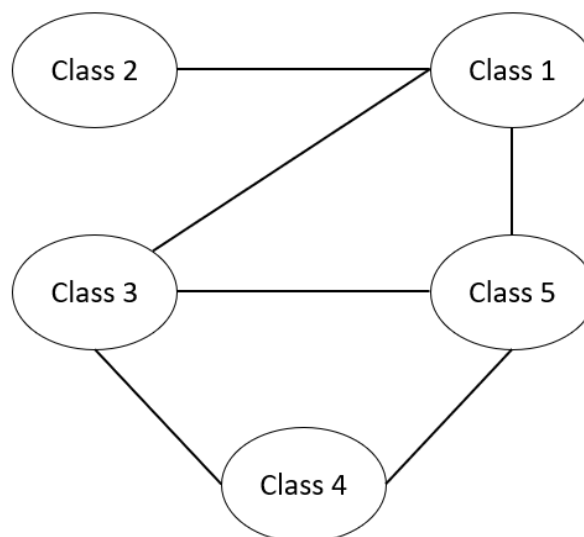
Variable,  $V = \{ \text{Class 1, Class 2, Class 3, Class 4, Class 5} \}$

Domain,  $D =$

- $\text{Class 1} \in \{ \text{Professor A} \}$
- $\text{Class 2} \in \{ \text{Professor A, Professor C} \}$
- $\text{Class 3} \in \{ \text{Professor A, Professor B, Professor C} \}$
- $\text{Class 4} \in \{ \text{Professor A, Professor B, Professor C} \}$
- $\text{Class 5} \in \{ \text{Professor A, Professor C} \}$

Constraint,  $C: \{ (\text{Class 2} \neq \text{Class 1}), (\text{Class 1} \neq \text{Class 3}), (\text{Class 1} \neq \text{Class 5}),$   
 $(\text{Class 3} \neq \text{Class 5}), (\text{Class 3} \neq \text{Class 4}), ((\text{Class 4} = \text{Class 5})) \}$

**Constraint Graph :**



2. Class 1= {Professor A}  
Class 2= {Professor C}  
Class 3= {Professor A , Professor B}  
Class 4= {Professor A, Professor B, Professor C}  
Class 5= {Professor A, Professor C}

3. Class 1= {Professor A}  
Class 2= {Professor C}  
Class 3= {Professor B}  
Class 4= {Professor C}  
Class 5= {Professor A}