Twenty-third lecture

# • MORE GRAPH THEORY

**Leftovers:**

> **Proof of Hall's marriage theorem**
>
> **Transversals**
>
> **Maximum matchings in bipartite graphs**

## Digraphs $D = (V, A)$

> $A \subseteq (V \times V)$, **the arcs**

## Networks

> $D = (V, A)$ **and** $w : A \to \mathbb{N}$
>
> $s, t \in V$

## Activity networks

> **Critical path analysis**

## Flow networks

> **capacity** $c : A \to \mathbb{N}$
>
> **cuts** $(S, T)$
>
> **max-flow min-cut theorem**