Exercise 1:
Show: the number of ears in any two odd ear-decompositions of a factor-critical graph $G$ is the same.
(4 points)

Exercise 2:
Prove that a minimal factor-critical graph $G$ has at most $\frac{3}{2}(|V(G)| - 1)$ edges and this bound is tight.
(4 points)

Exercise 3:
Let $G$ be a graph, $M$ a maximum matching in $G$ and $F$ as well as $F'$ two special blossom forests w.r.t $M$, each with the maximum possible number of edges. Show that the set of inner vertices in $F$ and $F'$ is the same.
(4 points)

Exercise 4:
Let $G$ be a $k$–connected graph with $2\nu(G) < |V(G)| - 1$. Prove:

a. $\nu(G) \geq k$,

b. $\tau(G) \leq 2\nu(G) - k$.
(Use the Gallai-Edmonds Theorem)
(4 points)

Deadline: Tuesday, November 16th, before the lecture.