Note: Rounded brackets, "( )", means it's optional.

1. **<u>Noun:</u>**

    $$NP \rightarrow (Det) \ (AdjP) \ N \ (PP)$$

2. **<u>Verb:</u>**

    $$VP \rightarrow (AdvP) \ V \ (NP) \ (AdvP) \ (PP) \ (AdvP)$$

3. **<u>Adjective:</u>**

    $$AdjP \rightarrow (Deg) \ Adj \ (PP)$$

4. **<u>Adverb:</u>**

    $$AdvP \rightarrow (Deg) \ Adv$$

5. **<u>Preposition:</u>**

    $$PP \rightarrow P \ NP$$