

$$\begin{array}{l}
\text{Composition Rule: } \frac{\{P\} S_1 \{Q\}, \{Q\} S_2 \{R\}}{\{P\} S_1; S_2 \{R\}} \\
\text{If Statement Rule: } \frac{\{P \wedge B\} S \{Q\}, (P \wedge \neg B) \Rightarrow Q}{\{P\} \text{ if } (B) S; \{Q\}} \\
\text{While Statement Rule: } \frac{\{I \wedge B\} S \{I\}}{\{I\} \text{ while}(B) S; \{I \wedge \neg B\}} \\
\text{Rule of Consequence: } \frac{P' \Rightarrow P, \{P\} S \{Q\}, Q \Rightarrow Q'}{\{P'\} S \{Q'\}}
\end{array}$$

Figure 2.3 Inference rules in programming logic *PL*.