**Course Learning Outcomes**

- To be able to read and comprehend formal definitions of programming languages
- To have a deeper understanding of the design and structure of programming languages
- To be aware of several diverse approaches to formal semantics
- To be aware of the potential applications of formal language specification, such as program verification and compiler generation

**Assessment of the Contribution to Program Outcomes**

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**Prerequisites by Topic**

CS 311.
1. BNF and its variants
2. Attribute grammars
3. Two-level grammars
4. Operational semantics and Vienna Definition Languages
5. Denotational semantics
6. Axiomatic semantics
7. Programming languages as metalanguages